The Croonian Lectures

ON THE

CHEMISTRY AND THERAPEUTICS OF URIC-ACID GRAVEL AND GOUT.

Delivered before the Royal College of Physicians of London,

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LECTURE III.

CHEMISTRY OF URATIC PRECIPITATION IN GOUT.

MR. PRESIDENT AND GENTLEMEN,—The chemistry of gout in its full extension embraces changes of the most diverse character in the blood and tissues. I do not propose to deal with the subject in this comprehensive sense, but to confine myself entirely to the relations of gout with uric acid. By far the most characteristic feature of gout is the formation of chalk-like deposits in certain parts and tissues of the body, especially in and about the joints. The essential component of these deposits is the bi-urate of sodium, and it is always present in the crystalline condition. The crystals are distributed through the implicated tissue in the form of delicate needles aggregated into tufts, bundles, and stars. The arthritic incidents of gout may be said, not improperly, to be simply incidents pertaining to the precipitation of these crystals in the structures of the joints. Without the occurrence of this precipitation the gouty paroxysm could not take place, nor could the more chronic changes in the joints, with their train of attendant symptoms, follow after. Were it possible for us to keep the sodium bi-urate in a state of solution in the bodily fluids, the clinical portraiture of gout would be completely transfigured. Whatever other manifestations of the gouty constitution we might have to deal with, we should not have to contend with this most grievous outcome of the diathesis. The evidence brought forward by Sir Alfred Garrod on this point appears to me to be conclusive, and justifies the deduction that the deposition of the crystalline bi-urates is not merely a concomitant, but is the actual cause of the joint troubles of gout. This view is now pretty generally accepted, and forms the basis of most of our plans of treatment in the management of the gouty state. Hence it is that the history and chemical properties of sodium bi-urate have acquired a capital importance in the pathology of gout. We are interested to know how this compound arises in the body from nascent uric acid, what are its relations of solubility in diverse media and more particularly in the blood and lymph and synovia; what are the factors which tend to determine its precipitation in the body or tend to prevent its precipitation.

I have before adduced evidence to show that the normal or physiological condition of uric acid in the body is that of a quadri-urate and that any departure from this condition must be regarded as pathological. In the last lecture I traced the changes which the quadri-urate undergoes in the urine and which lead up to the separation of uric acid in the free state as gravel and urinary sediments. In the present lecture I shall endeavour to trace the converse changes which the quadri-urate undergoes in the blood and lymph and which lead up to the formation and deposition of sodium bi-urate in the tissues. In order to effect this purpose I propose, first, to examine the solubility of the material of gouty concretions—namely, sodium bi-urate—in various media: in the serum of the blood, in synovia and in diverse saline solutions; then to examine and compare the behaviour of free or uncombined uric acid with the same media. Upon the basis of the results thus obtained I shall be able to formulate a general theory of uratic precipitation.

SOLUBILITY OF SODIUM BI-URATE IN DIVERSE MEDIA: (*a*) IN WATER, (*b*) IN BLOOD-SERUM AND KINDRED MEDIA, (*c*) IN VARIOUS SALINE SOLUTIONS.

(*a*) *Solubility of Sodium Bi-urate in Water.*—When sodium bi-urate is digested at blood heat with pure water it enters pretty freely into solution. Careful experiments indicated that the solubility of sodium bi-urate in distilled water at 100° F. approximated very closely to the proportion of 1 part in 1000. This was taken as the standard of comparison in estimating the solubility of this compound in all other media.

(*b*) *Solubility of Sodium Bi-urate in Blood-serum.*—Sodium bi-urate is very sparingly soluble in the serum of the blood, as is shown by the following experiments. Sodium bi-urate in excess was treated with blood-serum of the horse and pig in corked phials. The phials were placed in the warm chamber and frequently agitated. After a digestion of twelve hours the supernatant serum was filtered twice through a threefold filter.[1] The filtrate thus obtained, when acidulated with acetic acid, gave not the slightest precipitation of uric acid. Nevertheless, some slight solution had taken place. For when a portion of the filtrate was evaporated on a watch-glass in the warm chamber to near dryness, needles of bi-urate could be readily detected in it under the microscope, or when the filtrate was tested with Garrod's thread experiment crystals of uric acid were always found sprinkled on the thread. It thus appears that sodium bi-urate, although very sparingly soluble, is not absolutely insoluble in blood-serum. From a number of comparative experiments I estimated that at blood heat the amount dissolved was probably about 1 part in 10,000.

The behaviour of sodium bi-urate with synovia corresponded exactly with its behaviour with blood-serum; only minute traces went into solution. It was ascertained by direct experiment that the behaviour of uric acid and its compounds with blood-serum depended entirely on the saline ingredients contained in it and had no relation to its albuminous constituents. When the serum was deprived of its salts by dialysis, it was found that it reacted with uric acid and the urates like simple water; and no doubt the same rule holds good with regard to all the bodily fluids. An examination of the saline components of these fluids is therefore of prime importance in the study of the chemistry of gout. The serum of the blood and its derivatives, lymph and synovia, although differing considerably from each other in their albuminous elements, are almost identical in regard to both the quantity and the quality of their saline constituents. These latter are remarkable for the immense preponderance of sodium salts. The subjoined table exhibits the average proportion of the several saline ingredients contained in blood-serum.

TABLE XI.—*Showing the Percentages of the several Salts in Blood-serum.*

Sodium chloride	0·50 per cent.	Sodium salts = 0·73 per cent.
Sodium bicarbonate	0·20 per cent.	
Sodium phosphate	0·03 per cent.	
Potassium salts	0·06 per cent.	All other salts = 0·11 per cent.
Calcium salts, Magnesium salts	0·05 per cent.	

The fact just mentioned—namely, that the reactions of uric acid and the urates with the bodily fluids depends exclusively on the saline ingredients contained in them—suggested the idea that advantage might be taken of this circumstance to facilitate the chemical study of gouty precipitation. If a solution in water of the salines of blood-serum were prepared, such a solution might be expected to behave with uric acid and the urates like the serum itself; and this proved on trial to be the case. An examination of the above table shows that the salts of sodium exceed the aggregate of all the other salts of blood-serum in the proportion of seven to one. Practically, for the purpose in view, the saline basis of blood-serum might be considered as consisting essentially of sodium chloride and sodium carbonate, so greatly do these preponderate over the sum of all the other salts put together. From these particulars it may be deduced that a solution in water containing chloride and bicarbonate of sodium in the proportion specified in the table would be a fairly exact representation of blood-serum, in so far as its saline ingredients are concerned. It was found experimentally that such a solution reacted with uric acid and the urates in the same manner as blood-serum itself and in the same manner as a solution comprising all the salines of the serum in their due proportions as ascertained by the best analyses. Accordingly a solution was prepared in conformity with these indications, and was designated as the *standard solvent* or *standard solution*. Its composition was as follows:

TABLE XII.—*Showing the Composition of the Standard Solvent.*

Sodium chloride	0·5 gramme.
Sodium bicarbonate	0·2 gramme.
Distilled water	100 cubic centimetres.

This solution was much used in the present research, especially as a pioneer. For experimental purposes it pos-

[1] The needles of sodium bi-urate are so minute and delicate that some of them pass through the filter unless the most stringent precautions are taken.

sessed certain advantages over serum and synovia. Its composition could be more easily modified by additions to or subtractions from it; the quantities of uric acid and urates taken up by it could be more exactly estimated; and its limpidity permitted the first signs of precipitation to be more readily detected. The behaviour of uric acid and the urates with this solvent was studied in detail under varying conditions of temperature and time and with varying modifications of its composition. The results thus obtained were afterwards collated with those obtained with blood-serum in similar circumstances and with parallel modifications of its composition. The standard solvent was found to behave with sodium bi-urate in exactly the same way as blood-serum. Only the minutest traces of the bi-urate were taken up by it at 100° F. Such a solution, when carefully filtered, gave no precipitate of uric acid when treated with hydrochloric acid.

(*c*) *Solubility of Sodium Bi-urate in Saline Solutions.*—The influence of different saline substances on the solubility of sodium bi-urate has not only a pathological but also a therapeutical bearing. Saline substances are largely used in the treatment of gout, both in the guise of pharmaceutical preparations and as constituents of mineral springs, under the belief that they promote the holding in solution of the peccant bi-urate, and thereby hinder its deposition as gouty concretions and even favour the resolution of concretions already formed. It is therefore of practical interest for us to know what kinds of salts (if any) act favourably, and what kinds act unfavourably, in this respect. A large series of experiments were undertaken with a view of elucidating this point and the deductions indicated are, I venture to think, of considerable interest. The salts of which the effects were investigated were those of sodium, potassium, calcium magnesium and ammonium. The experiments were carried out in the following manner: Solutions of known strength of the salts to be tested were prepared in distilled water. These solutions were digested at blood heat with excess of sodium bi-urate in corked flasks. The flasks were then placed in the warm chamber and maintained at 100° F. with frequent agitation for five hours. The supernatant liquid was then carefully filtered off. In some cases repeated filtration through a threefold filter was required in order to obtain a perfectly transparent product. Finally, the percentage of uric acid in the filtrate was estimated and calculated as sodium bi-urate. The results thus obtained are exhibited in the following tables. The solubility of the bi-urate in distilled water is placed at the head of each table as a standard of comparison.

Salts of Sodium.—The effects of the following soda salts were investigated—namely, the bicarbonate, chloride, sulphate, phosphate and salicylate. All these salts showed a powerful influence in diminishing the solvent power of the medium on the sodic bi-urate, and the adverse influence increased progressively up to a certain point with the increasing strength of the solution.

TABLE XIII.—*Showing the Influence of Sodium Salts on the Solubility of Sodium Bi-urate, at 100° F.*

Solvent.	Sodium bi-urate dissolved.*
Water	1·00 per 1000
Water containing:—	
0·1 per cent. sodium bicarbonate	0·50 "
0·2 " " "	0·34 "
0·3 " " "	0·20 "
0·5 " " "	0·13 "
0·7 " " "	0·09 "
1·0 " " "	0·08 "
0·1 " sodium chloride	0·45 "
0·2 " " "	0·30 "
0·3 " " "	0·16 "
0·5 " " "	0·10 "
0·7 " " "	0·08 "
1·0 " " "	0·05 "
0·1 " sodium sulphate (crystals)	0·55 "
0·5 " " "	0·24 "
0·1 " sodium salicylate	0·65 "
0·3 " " "	0·36 "
0·5 " " "	0·25 "
0·1 " sodium phosphate (crystals)	0·70 "
0·5 " " "	0·32 "

* The estimations in this and the following tables were generally made by the usual gravimetric process with hydrochloric acid. When the quantity dissolved was too small for weighing, it was estimated by a minimetric adaptation of Arthaud and Butte's method.

The table indicates that the degree of alkalescence of the medium or its neutrality had not the slightest influence on the result. The carbonate and phosphate, which have an alkaline reaction, acted exactly in the same way as the chloride and sulphate, which have a neutral reaction. It may be observed that the sodium chloride had a more marked effect than the other sodium salts—more than the carbonate, but especially more than the sulphate, phosphate and salicylate. This difference is, however, solely due to the larger percentage of the metal in the chloride. When solutions were prepared of these several salts in such proportion that the percentage of sodium in them was constant, their effect was found to be as nearly as possible equivalent.

Salts of Potassium.—Solutions of the following potassium salts were subjected to examination—namely, bicarbonate chloride, phosphate and sulphate. The results stand in the strongest contrast with those obtained with sodium salts.

TABLE XIV.—*Showing the Influence of Potassium Salts on the Solubility of Sodium Bi-urate at 100° F.*

Solvent.	Sodium bi-urate dissolved.
Water	1·00 per 1000
Water containing:—	
0·1 per cent. potassium bicarbonate	0·96 "
0·2 " " "	1·00 "
0·3 " " "	1·00 "
0·5 " " "	0·97 "
0·7 " " "	1·02 "
1·0 " " "	0·98 "
0·1 " potassium chloride	0·96 "
0·3 " " "	1·01 "
0·5 " " "	1·10 "
0·1 " potassium phosphate	1·01 "
0·5 " " "	1·00 "

The experiments tabulated indicate that the salts of potassium exercise no influence neither for nor against on the solubility of the bi-urate. The results came out, within the necessary limits of error, precisely as with distilled water. The bicarbonate and phosphate, which have an alkaline reaction, behaved exactly in the same way as the chloride, which has a neutral reaction. The varying strengths of the solutions made not the least difference.

The difference between solutions of sodium salts on the one hand and those of potassium salts and distilled water on the other is so conspicuous that it is easily perceived without any resort to quantitative analysis. A 0·7 per cent. solution of any of the sodium salts (reckoned as anhydrous) dissolves so little of the bi-urate that saturated solutions made at blood heat show no precipitation of uric acid when treated with hydrochloric acid, or at most only a few scattered crystals at the end of forty-eight hours; whereas similar solutions made with potassium salts, or with distilled water, become almost at once milky when treated with hydrochloric acid, and in a few minutes throw down an abundant deposit of uric acid.

Calcium, Magnesium, and Ammonium Salts.—The addition of calcium, magnesium, and ammonium salts diminished the solvent power of water on sodium bi-urate. The subjoined table exhibits the results obtained with these three classes of salts.

TABLE XV.—*Showing the Influence of Calcium, Magnesium and Ammonium Salts on the Solubility of Sodium Bi-urate at 100° F.*

Solvent.	Sodium bi-urate dissolved.
Water	1·00 per 1000.
Water containing:—	
0·1 per cent. calcium sulphate	0·65 "
0·2 " " "	0·44 "
0·5 " calcium chloride	0·27 "
0·1 " magn. sulphate (crystals)	0·90 "
0·1 " magnesium chloride	0·85 "
0·5 " " "	0·68 "
0·1 " ammonium chloride	0·85 "
0·2 " " "	0·50 "
0·3 " " "	0·42 "
0·5 " " "	0·25 "

The table shows that calcium salts exercise a strongly deterrent effect on the solvent power of water on sodium bi-urate, approaching in this respect but not equalling the sodium salts. The magnesium salts, on the other hand, although exhibiting a distinctly deterrent influence, approach more nearly to the indifferent reaction of the potassium salts. The salts of ammonium were found to stand in an intermediate position between those of calcium and magnesium.

Reviewing these results as a whole, the following conclusions may be deduced, in regard to the solubility of sodium bi-urate in simple saline solutions, at the temperature of the body:—(*a*) The influence of a salt depends exclusively on the nature of the base, and has no reference to the acidulous radicle with which the base is combined. (*b*) Salts with an alkaline reaction, such as carbonates and phosphates, do not differ in the least from neutral-reacting salts, such as chlorides and sulphates. (*c*) Salts of soda exercise a strong deterrent influence, and the deterrent influence increases with the increasing percentage of the salts in solution. Salts of

lime, magnesia and ammonia have also a deterrent effect, but slighter than that of salts of soda. Salts of potassium have no effect either way.

BEHAVIOUR OF URIC ACID WITH BLOOD-SERUM AND THE STANDARD SOLVENT AND WITH SYNOVIA.

An examination of the behaviour of free or uncombined uric acid with blood-serum and kindred media is a necessary part of the study of the chemistry of gout. It is only by knowledge thus gained that we can hope to elucidate the mode in which sodium bi-urate originates in the body, and learn something of the conditions which control its precipitation in the gouty system. The reactions of free uric acid with blood-serum and synovia and with the standard solvent and its modifications are of quite a different kind from those of sodium bi-urate with the same media. In the latter case there is simply an act of solution. The bi-urate is taken up substantially unchanged, and the questions we had to decide were as to its degrees of solubility in the several menstrua. But when free uric acid is brought into contact with blood-serum and kindred media, there occurs not merely an act of solution, but a series of chemical reactions. Uric acid first enters into combination with the bases contained in the media; these new compounds then pass into solution, and subsequently undergo certain ulterior changes which it is of much interest to follow.

Behaviour of Uric Acid with Blood-serum and the Standard Solvent.—When uric acid is digested at the temperature of the body with blood-serum or with the standard solvent it passes into solution in combination with a base. In the course of an hour, with due agitation, the liquids will, on analysis, be found to have taken up uric acid in the large proportion of about 1 part in 500. The chemical and solvent power of these media on uric acid depends on the sodium carbonate contained in them and not on the sodium chloride, for a solution of the latter salt alone has no more action on uric acid than pure water. On the other hand, a solution containing sodium bicarbonate alone has precisely the same action on uric acid as when it is associated, as in the serum and standard solvent, with sodium chloride. The question now arose, What is the combination in which uric acid enters into solution? It could not be bi-urate, because crystalline sodium bi-urate is almost insoluble in these media; nor could it be neutral urate, because the neutral urates cannot arise in the presence of carbonates. The presumption remained that the combination is a quadri-urate. It was, however, highly desirable to have direct proof. This was obtained by taking advantage of the great difference of solubility of quadri-urates at different temperatures. The following experiment appears to be conclusive on this point. Uric acid in excess was digested at blood heat with a 1 per cent. solution of sodium bicarbonate under constant agitation for twenty minutes. The filtered product was rapidly cooled on ice. It threw down a copious amorphous deposit, which when duly washed on the filter with rectified spirit to free it from adherent carbonate gave the characteristic reaction of quadri-urate—that is to say, it was decomposed by water with abundant emission of uric-acid crystals. A corresponding experiment with a 0·5 per cent. solution of potassium bicarbonate yielded exactly the same results.[2] We may therefore conclude with certainty that when uric acid comes into contact with blood-serum or the standard solvent it enters into solution in the first instance as a quadri-urate; but the process does not stop here. The quadri-urate gradually takes up an additional atom of base and is thereby converted into bi-urate and the bi-urate thus formed is, after some delay, eventually precipitated in the crystalline form.

In order to bring this remarkable succession of events more vividly before your minds I will relate the particulars of two actual experiments.

Experiment 1.—Uric acid in excess was digested, with frequent agitation, in the standard solvent at 100° F. for twenty minutes. The excess of uric acid was then filtered off and the clear solution was placed in a cork phial in the warm chamber. It remained unaltered for two days. On the third day it began to precipitate and on the fourth day a copious deposition of crystalline bi-urate took place. On the fifth day the process was completed and the supernatant liquor was found on acidulation to contain only traces of uric acid.

Experiment 2.—Blood-serum of the horse was digested at 100° F. with excess of uric acid for fifteen minutes with constant agitation. It was then filtered and placed in a corked phial in the warm chamber. In about twelve hours the serum, previously clear, began to lose transparency and fine needles of bi-urate were detected in it with the microscope. On the next day copious precipitation took place. On the fourth day the process seemed to be completed and the supernatant serum was found to be almost free from uric acid. It was impossible not to be struck with a certain rough resemblance between the results observed in these experiments and the phenomena of the gouty paroxysm. In the gouty subject it is assumed that the blood becomes more and more impregnated with uric acid until, after a certain period of incubation has been accomplished, sudden precipitation of sodium bi-urate takes place in and about the joints, and the "fit of the gout" is declared. Then follows a process of recovery, with restoration of the blood to a purer state—that is, with a lessened impregnation of uric acid. In the artificial counterfeit we observe a similar succession of events. First, impregnation of the medium with sodium quadri-urate; secondly, a period of incubation or maturation, during which the quadri-urate passes into bi-urate; thirdly, somewhat sudden precipitation of sodium bi-urate in the crystalline form; and lastly, restoration of the medium to comparative purity.

Behaviour of Uric Acid with Synovia.—It is a marked peculiarity of the uratic phenomena of gout that the deposits occur most commonly in and about the joints; and it was a matter of interest in the present inquiry to ascertain how synovia behaved when impregnated with uric acid; and especially whether synovia, as compared with blood-serum and when impregnated to an equal degree, had the property of retarding or hastening the precipitation of bi-urate. This part of the investigation is hampered by the difficulty of obtaining an adequate supply of materials, and my information thereupon is scanty. I have so far only been able to make satisfactory experiments with synovial fluid drawn from the hip of the ox. From this source about a couple of ounces may be obtained from the two joints. Butchers tell me that the synovia from the hip is thinner as well as more abundant than that obtained from the other joints. On two occasions I was able to examine and compare the synovial fluid of the hip-joint with the blood-serum of the same ox. The behaviour of the two fluids with uric acid was substantially the same; but in both instances I found that, when impregnated with uric acid in an equal degree, precipitation of bi-urate began distinctly a little earlier in the synovia than in the serum. My impression is—but it is only an impression—that with the thicker and more concentrated synovia of the smaller joints this difference would be more pronounced. Whether there is in this distinction between serum and synovia a key to the preference of uratic deposition for the joints is a question well worthy of further inquiry. It is, at any rate, conceivable, supposing the blood and its derivative fluids to be equally impregnated with uric acid and supposing the synovial fluids to be more largely charged than their congeners with salts and especially with sodium salts, that precipitation of bi-urate would take place earlier and by preference in and about the joints than elsewhere. This point will be again touched on in my next lecture when I come to speak of the topographical distribution of uratic deposits.

GELATINOUS OR HYDRATED MODIFICATIONS OF THE URATES.

There is a point of considerable interest in connexion with the chemistry of the urates which may be conveniently considered in this place, and that is the occurrence of gelatinous modifications of these compounds, which differ both in physical condition and in solubility from the more common granular and crystalline forms. The existence of these gelatinous modifications was first noted by Dr. Ord in the course of his well-known researches on the influence of colloids upon crystalline form and cohesion.[3] He observed that when hot saturated solutions of the urates of soda or ammonia were mixed with an equal bulk of strong solutions of the alkaline chlorides or phosphates the urates were thrown down on cooling in a gelatinous state. He further observed that this condition was not a permanent one, and that the gelatinous matter, after a time, changed into a mass of crystals. The interest for us in our

[2] Solutions of the common (di metallic) phosphates of soda and potash and of the alkaline acetates also take up uric acid very freely at blood heat and the combination formed in these cases in the first instance is likewise a quadri-urate as may be shown by the above-described method of cooling on ice.

[3] On the Influence of Colloids upon Crystalline Form and Cohesion, by W. M. Ord, London, 1879, pp. 72 et seq.

present inquiry of these observations lies in the probability that these gelatinous modifications of the urates intervene, perhaps importantly, in the succession of changes which lead up to the formation of uratic deposits in gout. I must therefore ask your attention to some additional particulars which I have gathered on this subject. Crystalline sodium bi-urate is very much more soluble in hot water than in cold water. Nevertheless, such a hot solution, fully saturated, does not deposit its surplus bi-urate on becoming cold; it continues perfectly clear and remains so.[4] But if the solution be evaporated down on the water-bath the bi-urate is again recovered in the crystalline form. It is obvious, therefore, that the bi-urate in passing into hot solution undergoes some notable change whereby its solubility is greatly enhanced. This change consists in the assumption of the gelatinous modification, and herein lies the explanation of the enhanced solubility. These deductions are substantiated by the following experiment: Crystalline sodium bi-urate is dissolved to saturation in hot water. The filtered solution when cold is mixed with an equal volume of a 20 per cent. solution of common salt. A voluminous jelly-like precipitate is thrown down.[4] This is caught on a filter and allowed to drain, and then cautiously washed on the filter with cold water. The gelatinous bi-urate is thus obtained in a condition of approximate purity. Now when this substance is digested at 100° F. with blood-serum or with the standard solvent it goes freely into solution—so freely that when the filtered product is treated with acetic acid it throws down on standing a considerable deposit of uric acid. But it has before been shown that these same media when digested under similar conditions with the crystalline sodium bi-urate take it up so sparingly that the filtered products do not yield any deposit of uric acid when acidulated.

Dr. Ord noticed, as above stated, that the gelatinous bi-urate collected as a mass on a filter passes after a time into the crystalline condition. The same transformation occurs when the gelatinous matter is held in solution in blood-serum or the standard solvent. Such solutions when set aside continue clear and unchanged for a certain time, but after the lapse of a day or two the bi-urate is reprecipitated in the crystalline form. The obvious explanation is this. The dissolved gelatinous modification reverts by slow degrees to the anhydrous crystalline condition and the bi-urate in this condition is, as we know, almost insoluble in these media. Consequently, when the transformation reaches a certain point the bi-urate is necessarily precipitated. As to the nature of the gelatinous modifications of the urates, Dr. Ord is inclined to regard them as true colloids, and he remarks on their resemblance to the colloidal modifications of silica. Their jelly-like appearance is certainly strongly suggestive of this idea, but they differ radically from true colloids in passing with ease and unchanged through the dialyser. Their real nature is, I believe, that of hydrated salts. The crystalline bi-urates are anhydrous, the gelatinous modifications are highly hydrated. It is well known that certain salts can be obtained in several degrees of hydration and that these several hydrations possess diverse degrees of solubility. The quadri-urates likewise readily assume the gelatinous modification. Sodium quadri-urate may be obtained in the gelatinous state in the following manner. A 5 per cent. solution of the common phosphate of soda is heated to boiling with excess of uric acid. The mixture is filtered hot. On cooling the filtrate sets into a jelly. The gelatinous substance thus obtained, pressed between blotting paper to deprive it of its mother liquor, possesses the characteristic reaction of a quadri-urate—that is to say, it is rapidly decomposed by water with copious emission of uric-acid crystals.

Summary of the History of Uric Acid in the Body: (a) *in the Normal State*, (b) *in the Gouty State.*—The facts elicited in this and the preceding lectures enable us to obtain a coherent view of the state and destiny of uric acid in the body. It has been shown that in normal urine uric acid always exists as a quadri-urate; and that in animals which eliminate their nitrogen as uric acid, like birds and serpents, the urinary secretion is composed entirely of the same combination. Proof has also been furnished that in liquids containing alkaline carbonates—such as the serum of the blood and its derivatives, lymph and synovia—uric acid passes into solution in the first instance as a quadri-urate. From these considerations it may be inferred that in the normal state uric acid is primarily taken up in the system as quadri-urate, that it circulates in the blood as a quadri-urate and that it is finally voided with the urine as a quadri-urate. In perfect health the elimination of the quadri-urate proceeds with sufficient speed and completeness to prevent any undue detention or any accumulation of it in the blood. But in the gouty state this tranquil process is interrupted, either from deficient action of the kidneys or from excessive introduction of urates into the circulation, or from some other cause, and the quadri-urate lingers unduly in the blood and accumulates therein. The detained quadri-urate, circulating in a medium which is rich in sodium carbonate, gradually takes up an additional atom of base and is thereby transformed into bi-urate. This transformation alters the physiological problem. The uric acid, or rather a portion of it, circulates no longer as the more soluble and presumably easily secreted quadri-urate, but as bi-urate, which is less soluble, and probably also—either for that reason or because it is a compound foreign to the normal economy—less easy of removal by the kidneys. The bi-urate thus produced exists at first in the gelatinous modification, but with the lapse of time and increasing accumulation it passes on into the almost insoluble crystalline condition and then precipitation becomes imminent, or actually takes place.

THE CONDITIONS WHICH ACCELERATE OR RETARD THE PROCESSES WHICH CULMINATE IN THE PRECIPITATION OF SODIUM BI-URATE.

Assuming a real analogy to exist between the processes which go on in serum artificially impregnated with uric acid and the processes which go on in the blood of a gouty patient and which culminate in the deposition of uratic concretions, it is a matter of interest, as bearing on the pathology and treatment of gout, to investigate the conditions which, in the artificial parallel, accelerate or retard these processes. As already explained, these processes consist of three distinct chemical changes. First, the quadri-urate originally formed is converted into hydrated bi-urate; next the hydrated bi-urate is changed into anhydrous bi-urate; and finally this anhydrous bi-urate is precipitated in the crystalline form. For the present purpose it will be more convenient to consider these changes as one continuous process; and for the sake of brevity and ease of expression this process may be designated as "maturation." The investigation embraced a study of the effects of temperature, percentage of uric acid in solution and the addition of various saline and other substances to the maturating medium.

(*a*) *Temperature.*—It was found invariably that the stage of maturation was more quickly accomplished in the warm chamber at 100° F. than at the temperature of the room, but the ultimate result was exactly the same in both cases. For example, serum charged with 1 part uric acid in 600 began to precipitate in the warm chamber in four hours and precipitated copiously in six hours. A duplicate specimen kept at the temperature of the room (65° F.) began to precipitate in eight hours and did not precipitate copiously for sixteen hours. Another sample of serum, impregnated with 1 part of uric acid in 1000, began to precipitate in the warm chamber in six hours and deposited copiously in fourteen hours; while a duplicate kept at the temperature of the room (60° to 70° F.) only began to precipitate in thirty hours and copious precipitation did not take place for forty-eight hours. The absolute constancy of these results led to the idea that maturation would go on more rapidly at a febrile temperature (104° to 105° F.) than at the normal temperature of the body, and that herein might be found an explanation of the circumstance that gouty outbreaks sometimes follow immediately on the heels of an injury. When, however, this notion was tested experimentally no support was found for it. It was also conceived that, although maturation itself was favoured by warmth, the terminal act of the process—namely, the act of precipitation—might, on the contrary, seeing that the bi-urate is more soluble at higher than at lower temperatures, be favoured by cold and that this might account for the fact that gouty concretions tend to be deposited in the cooler and more exposed parts of the body, in the joints and subcutaneous tissues rather than in the warmer interior regions. I failed, however, to obtain any direct experimental evidence in favour of this conception.

(*b*) *Quantity of Uric Acid in Solution.*—It was found that no condition exercised so great and decisive an influence on the speed of maturation and the advent of precipitation as

[4] The gelatinous bi-urates may be thrown out of their solutions in several ways. Instead of common salt a concentrated solution of the phosphate, chloride or acetate of sodium, potassium or ammonium may be used, or any of these salts in crystals may be added to saturation to the solution.

the proportion of uric acid in solution. The following experiment with blood-serum, the results of which are arranged in a tabular form, illustrates these points in a striking manner. The phials containing the serum were placed in the warm chamber for fourteen days and were afterwards kept at the temperature of the room. Chloroform was added to prevent putrefactive changes:—

TABLE XVII.—*Showing the Influence of Percentage of Uric Acid in the Medium on the Speed of Maturation, and the Time of Advent of Precipitation.*

Quantity of uric acid contained in the serum.	Time of precipitation of sodium bi-urate.
1 in 1000	Precipitation began in 6 hours; copious precipitation in 14 hours.
1 in 2000	Precipitation began in 33 hours; copious precipitation in 3 days.
1 in 3000	Slight precipitation began in 3 days, which became a little more copious in 12 days.
1 in 4000	A few needles of bi-urate were detected on the 6th day; more needles and a few tufts in 12 days.
1 in 5000	A few short needles were detected on the 13th day. In 30 days the needles were somewhat more numerous.
1 in 6000	No needles were discoverable in 14 days; a few were detected in 40 days.
1 in 8000	No needles could be detected after the lapse of 40 days.

Assuming that the inflammatory arthritic attacks in gout are directly due to copious and sudden precipitation of crystalline stars and needles of sodic bi-urate in the cartilages and fibrous structures of the joints, the evidence before me indicates that such copious sudden precipitation can only take place when the fluids bathing these structures are impregnated with uric acid in at least the proportion of 1 part in 2500. Below this point the precipitation occurs slowly and scantily, and only in the form of short scattered needles. When the proportion of uric acid in the serum was only 1 part in 5000 the deposited needles were mostly about as long as the diameter of a red blood-disc, some were twice this length, and a few three times this length, and all were of extreme tenuity. It is quite conceivable that this slighter precipitation in the tissues of short scattered needles might account for certain irritations in the various organs, such as characterise irregular or larval gout; but it could scarcely engender downright inflammatory attacks. It is further conceivable that the presence in the blood of such scattered needles might constitute foci, around which clotting might take place; and that the thrombosis not unfrequently observed in gouty cases might thus be accounted for. The impregnation of the blood in gouty persons with uric acid to the extent of these lesser degrees is within the range of observed actualities. Sir Alfred Garrod obtained by quantitative analysis from the blood-serum of one of his patients uric acid to the amount of 1 part in 5714; and he remarks that the quantities thus recoverable from the blood are probably much under the actual amounts, as considerable loss is liable to occur from unavoidable causes. These considerations lead to the suggestion that a microscopical examination of the blood in gouty persons might sometimes reveal the existence of needles of bi-urate in that fluid. I tested this point in ten cases of chronic gout by examining a drop of blood drawn from the finger, but I failed to obtain positive results.

(*c*) *Influence of Saline Substances.*—The effect of saline substances on the maturating process was tested by adding small quantities of various salts to serum impregnated with uric acid and observing whether these additions accelerated or retarded precipitation. The experiments were carried out in the following manner: Uric acid was dissolved at blood heat in blood-serum in the proportion of 1 per 1000 or 1 per 2000. A number of phials capable of holding 25 cc. were charged with the serum thus impregnated. One phial had no further addition made to it—this was the control phial. To the others small quantities, varying from 0·05 per cent. to 0·2 per cent. of the salts to be tested, were added. The phials were then chloroformed to prevent decomposition and placed in the warm chamber. The occurrence of precipitation was noted at two points—namely, at its very onset, as revealed by the detection on microscopical examination of needles of bi-urate, and secondly, when precipitation became copious and was recognisable by the naked eye. A large number of experiments were made on this plan. The state of the medium during precipitation was that of a supersaturated solution, and, consequently a very slight, often inappreciable, inequality in the conditions of the experiment was sufficient to disturb the time and rate of precipitation. For this reason it was frequently found necessary to repeat the observations once and again to get the correct indication. I need not trouble you with details; the following summary indicates sufficiently the conclusions deduced from the experiments. The addition of *sodium* salts to the maturating medium hastened precipitation. An idea of the degree of acceleration may be gathered from the following examples. Serum impregnated with uric acid to the extent of 1 part per 1000 commenced to precipitate in seven hours and precipitated copiously in sixteen hours. A parallel experiment, in which 0·2 per cent. of sodium chloride had been added to the serum, began to precipitate in five hours, and precipitated copiously in twelve hours. Another sample of serum was impregnated with uric acid to the extent of 1 part in 2000. This began to deposit crystals in thirty hours, and deposited freely in ninety-six hours. In a parallel experiment, in which 0·2 per cent. of sodium bicarbonate had been added to the medium, precipitation began in twenty hours and free precipitation took place in forty hours. The alkaline reacting salts, the carbonate and phosphate, had exactly the same effect as the chloride and sulphate, which are neutral in reaction.

The addition of *potassium* salts sensibly retarded precipitation, but did not appreciably diminish the eventual amount of it. Here, again, the carbonate and phosphate, which are alkaline, produced just the same effects as the chloride, iodide and bromide, which are neutral. Both with potassium and sodium salts the results were entirely dominated by the nature and quantity of the bases added and had no reference to the acidulous radicle with which the bases were combined.

The addition of *calcium* and *magnesium* salts appeared to delay precipitation, but their action in this respect was quite insignificant or even doubtful.

ABSTRACT OF THE

Hunterian Lectures

ON

CERTAIN DISEASES OF THE BREAST,

Delivered at the Royal College of Surgeons

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LECTURE III.

IN this lecture the growths affecting the ducts of the breast are described under a classification neither strictly clinical nor pathological.

Duct papilloma is characterised by the development of papillary growths in the larger ducts, usually in the region of the nipple and particularly in the sinuses. There is no nipple retraction or enlargement of the axillary glands. Discharge from the nipple, which may be serous, clear, or bloodstained, or pure blood, is a marked feature, but it is rarely persistent. The growth is unilateral, unaccompanied as a rule by pain or tenderness, and its progress is slow. It is met with in both married and single from thirty-five to fifty-five. The discharge from the nipple may precede any swelling by some considerable period. There may be a history of prolonged suckling, sore nipples, or injury. On incising the swelling we have a space with smooth walls almost completely filled by a raspberry-like soft papilloma, attached by a slender pedicle. These papillomata may be single or multiple, usually the latter. (Fig. 1.) Of these, one alone may be large and they seem generally distributed in one duct area, of which the ducts may be dilated.[1] The following is an illustrative case: "S. S——, thirty-nine, was admitted under the care of Mr. Clutton, in September, 1890. She was married and had three children, the youngest fifteen months old and allowed

[1] Barker: Brit. Med. Jour., vol. i. 1890.

to suckle for thirteen months. She had had cracked nipples, but no injury. On admission there was a lobulated and fluctuating lump just above and to the inner side of the left nipple, which was not retracted; this was first noticed three and a half years before, accompanied by a blood-stained nipple discharge and had grown without pain. The axillary glands were not enlarged. The right breast was healthy. On removal the small cyst contained a soft, purplish, villous papilloma growing from its deep surface and almost filling it, bathed by a yellow serous fluid; the growth was easily detached. The breast tissue around was indurated and embedded in it were small cystic spaces containing greyish growths. The nipple was not removed. In about three months there was a reappearance of thickening at the base of the nipple, accompanied by some discharge. The nipple and all the diseased tissue were removed and since this time, for one year and a half, the patient has remained quite well." Rarely the warty growths may project from the mouths of the ducts on the surface of the nipple looking like granulomata.[2]

The papillomata are adeno-fibromatous in structure, composed of a delicate fibrous tissue basis on which are arranged one or more layers of epithelial cells, the deepest being

FIG. 1.

columnar in type. This connective tissue shows no cell infiltration. The cystic spaces are seen to be dilated ducts lined by cubical or short columnar epithelium continuous with the cells covering the papillomata. Specimen 4765 in the Hunterian Museum of the Royal College of Surgeons shows warty growths in enlarged ducts; at the exit of the chief dilated duct from the nipple there is seen to be a very definite constriction. In the case of S. S—— before quoted just beneath the surface epithelium of the nipple was noticed a small cavity filled with granular material. Below this the ducts passing down the nipple were dilated with small warty projections into their interior and the glandular substance in a few spots seemed cystic. From these specimens the change in the ducts appears to be a generalised one and the papilloma only an overgrowth at a special spot of the changed duct surface. Is this alteration due to some obstruction at the nipple surface leading to dilatation and papillary formations behind this, as may happen with strictures elsewhere, or does the change occur in relation with the chronic irritation induced by prolonged suckling, or is the introduction of some irritant, mechanical or microparasite, the causal agent? To assume any of these is mere speculation, but the latter lends itself to our consideration when we remember analogous changes produced by such factors.

The diagnosis of these cases, from the discharge with thickening in the nipple region and no enlarged glands, is comparatively easy. The prognosis is good after removal of the diseased area if it is freely done. If only a small segment be excised, it is possible that some of the dilated ducts may be left behind, leading to reappearance of the growth. The affected area should be removed well into the base of the nipple for the same reason, if the latter be saved. The whole breast need not be taken away except in the cases where the papillomata are multiple and are not distributed in the same duct area. Many cases are recorded[3] of permanent cure and in no instance can I find a report of a recurrence of this condition as a carcinoma.

Duct carcinoma has been described under a great many names. Billroth,[4] in discussing the forms of adenoma, makes a soft variety, the cystadenoma, which corresponds to the softer type of duct cancer. Cornil and Ranvier[5] were among the earliest pathologists to endow this disease with a specific name, calling it "carcinôme villeux," and to the French we are specially indebted for variation in the terminology. Delbet[6] names these growths "dendritic epitheliomas," Castex "cylindrical epitheliomas," and Labbé and Coyne "intra-canalicular epitheliomas." Neumann,[7] in Virchow's Archives, refers to the disease as "encysted medullary carcinoma," and Waldeyer,[8] in the same work, mentions tumours arising from the lactiferous ducts to which he gave the name of "fibro-carcinoma cysticum mammæ." The simplest type of the disease has the papillary form, resembling the innocent growth before described, but with associates indicating malignancy. Clinically these papillary forms are not to be differentiated with any certainty from a firmer variety of tumours; histologically there may be great variation. There is in both cases a localised tumour, usually under the areola. It is not essential that they should be in the nipple region, some occurring towards the periphery of the gland. These growths are circumscribed and somewhat oval in shape. They are usually elastic, especially in the papillary form, where a cystic space has become more or less solid from outgrowths into its interior. The skin is quite free and the nipple is not retracted. Discharge is unusual, but in cases where the growth is very soft a blow or pressure may be followed by a bloodstained discharge. The cases recorded show that the outer half of the gland is more often affected. As a rule these tumours develop without pain; in a few cases it may be slight, but it never seems to be severe. Tenderness may be present. There is so little discomfort that advice is not sought for some time; of thirteen cases one had been present for three years, another two years, and the rest between a year and a half and three months. The disease affects elderly women; more than half are between forty and fifty, some are over that age, but it is rare to get them in quite young women. Bowlby[9] records a case at twenty-nine with a history of five months' growth. It is met with in married and single in about equal proportions and it is rarely seen in males.[10] These tumours are usually encapsuled. On section the papillary form may be very friable and appear granular. They are soft, do not cup on section, and are of a rosy colour, unless hæmorrhage has occurred, which is very frequent in these soft growths. Then they have a brown or black appearance, which in many instances has caused its nature to be considered as a melanotic sarcoma. Besides the bloodstaining these essentially villous tumours may have a gelatinous look from mucoid changes in the growth.[11] The firmer forms are not so friable and are of a greyish or reddish colour; they have been mistaken for encapsuled vascular sarcomata. In size the tumours vary from quite small nodules up to that of a hen's egg. In the true villous form it may be found that the lumps are multiple and distributed in one duct area. Encapsulation is not a constant feature. In some cases with quite a small growth infiltration may be detected in the fat around without, clinically, there being any other evidence of malignancy,[12] but as a rule this infiltration does not take place until at quite an advanced stage. The axillary glands are not involved early. The hæmorrhage in relation with these growths may be of so marked a character as to form cystic swellings filled with blood and to them the term "blood cyst" has been applied.[13] Masterman[14] describes a case under the name

[2] Pollard: Trans. Path. Soc., vol. xxxvii, p. 483.

[3] Bryant: Diseases of the Breast. Cassell and Co.
[4] Die Krankheiten der Brustdrüsen.
[5] Manual of Pathol. Histology.
[6] Traité de Chirurgie, tome vi.
[7] Virchow's Archiv, vol. xxiv., p. 219. [8] Ibid., vols. xli. and lv.
[9] St. Bartholomew's Hospital Reports, vol. xxiv.
[10] Vide Trans. Path. Soc., vol. xxv., p. 223.
[11] Robinson: Trans. Path. Soc., vol. xl.
[12] Pollard: Trans. Path. Soc., vol. xxxvii., p. 483; and Pitts: Trans. Path. Soc., vol. xxxix.
[13] Godlee: Trans. Path. Soc., vol. xxvii., p. 270.
[14] St. Bartholomew's Hospital Reports, vol. xxvii.

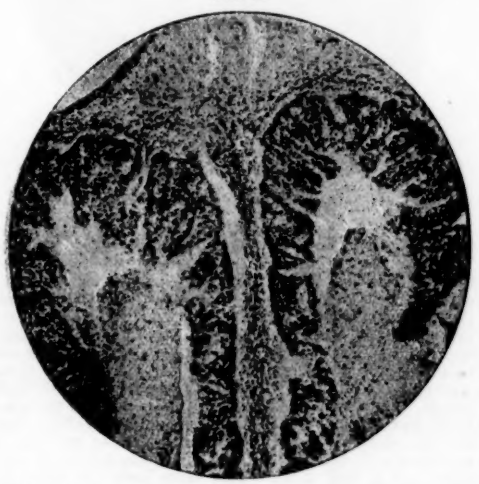
"hæmorrhagic carcinoma" which, from the history and description, seems to be undoubtedly a villous cancer with hæmorrhage. Hæmorrhage, in the firmer form of these tumours, is not so common; if present, it may complicate the diagnosis.[15]

Histologically, in the soft forms distinct papillæ are seen to pass into the interior of a cavity; these have secondary offshoots, which interlock in filling up the space. These

FIG. 2.

papillary processes have an epithelial covering two or three layers in thickness, the deeper cells being typically columnar or cubical. These cells are arranged on delicate connective-tissue processes, which show such a scanty round-celled infiltration in many cases as to give doubts of the malignancy of the growth. (Fig. 2.) The surface cells very soon undergo mucoid degeneration, the latter material staining with hæmatoxylene a reddish colour, like that met with in ovarian adenomata; this mucus holds in suspension numerous epithelial cells

FIG. 3.



and blood discs. The connective tissue rarely appears in places to have undergone a mucoid change, as in carcinoma myxomatodes, and there may be hæmorrhage into it. Besides the more or less solid growths we may have evidence in the breast tissue around of cystic change due to dilatation of ducts in association with chronic interstitial mastitis. In this tissue we may be able to trace all stages in the evolution of the growth from a multiplying epithelium to the formation of well-marked papillary processes and it seems consistent to assume that the growth has developed on the top of a chronic inflammation. In some cases again the papillary processes may be so united as to give the growths a trabeculated appearance. In the firmer forms the structure may be trabecular or may show alveolar spaces lined by an epithelium many layers in thickness, the outermost cells being columnar. The innermost layer of this epithelium tends to become papillated and in the centre may be granular débris. (Fig. 3.) The alveolar spaces in some examples may be filled by epithelial cells resembling a very cellular acinous carcinoma, except that the peripheral cells are columnar.

The course of these tumours is slow, extending over many years. R. Williams[16] groups the cases of duct papilloma and villous carcinoma together and says, "These growths are of a perfectly innocent nature, though often multiple; they have no tendency to local infection, nor do they ever disseminate in the adjacent lymphatic glands or the system at large and when completely removed they never recur." This very favourable prognosis is unfortunately not borne out by facts, for we have well-marked examples where the growth has recurred near the scar and where the glands have become involved. Bowlby[17] describes a case of villous

FIG. 4.

cancer where there were two recurrences: one two years and a half after the first operation and the other ten months later. One of my cases[18] had a local recurrence fifteen months after and the glands became involved within the next six months, or four years and a half after the tumour was first noticed. Butlin[19] quotes a case in which there were five local recurrences and involvement of glands ten years after the growth was first seen. I cannot find the record of any secondary growths in bones or viscera in this group. The treatment in these cases should be free removal at the earliest opportunity, with exploration of the axilla.

The next variety of duct cancer differs from the last group in its marked likeness to scirrhus. These tumours occur between forty and fifty years of age, attacking both single and married, the latter being very often sterile. They are hard, non-elastic and bossy on the surface, with ill-defined margins infiltrating into the tissues around. They are not limited especially to the nipple region. There is a distinct tendency for the skin to be implicated and in some cases it may be reddened. The nipple is not retracted and there is no discharge, but the axillary glands may be involved. Pain is a fairly constant feature, but it does not occur until late. The tumours are single and may have fluctuating spots in them

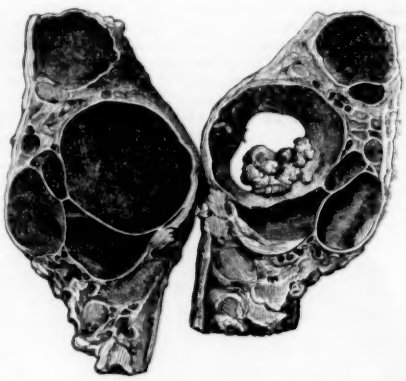
[15] Butlin: Trans. Path. Soc., vol. xxxviii.

[16] THE LANCET, vol. i. 1892, p. 880.
[17] St. Bartholomew's Hospital Reports, vol. xxiv.
[18] Trans. Path. Soc., vol. xli.
[19] Ibid., vol. xxxviii.

from the presence of cysts. Their growth is slow, causing little inconvenience. Not only are these growths not to be distinguished clinically from scirrhus, but on section there may be some difficulty. They have a firm appearance, greyish red in colour, but they do not have the "unripe pear" look, nor do they cup on section. Hæmorrhage does not usually occur. The tissues around the tumours give evidence of chronic inflammatory change. Under the microscope these growths have a tubular structure, lined by, in most places, a single layer of columnar epithelium; many of the tubes are considerably dilated, so as to form cystic spaces.[20] (Fig. 4.) The latter, from the proliferation of their lining cells, may be converted into solid nodules, resembling a form of growth figured by Labbé and Coyne.[21] In some cases around these tubes may be seen great thickening of the basement membrane, which has been noted by Thin.[22] The diagnostic points between these growths and scirrhus are very slender, the chief clinical features in the former being the absence of nipple retraction and discharge and the slow rate of growth. These tumours tend to involve glands, but this does not apparently take place until the primary growth has been in existence for some time. There may be secondary deposits elsewhere, but of these very little is known. Shattock[23] has described a specimen in St. Thomas's Hospital, where there were tumours of a porous nature in connexion with two ribs. This was obtained from a woman of sixty, whose left breast had been amputated a few weeks before by Joseph Henry Green. The rib tumour proved to be a columnar epithelioma. I can find no other case recorded of dissemination in man. That tumours analogous to this occur in the lower animals has been shown by W. G. Spencer,[24] where many of the mammary glands of a cat were affected by hard infiltrating growths simulating scirrhus. There were secondary growths in the lymphatic glands and lungs and the tumour histologically proved to be a duct cancer. Should the tumour be removed, with the axillary glands if they are enlarged, there seems to be a lengthy period of immunity—at present, from the cases seen, it is impossible to speak of a cure. In three typical cases sixteen months, nineteen months and two years and a half have elapsed since removal and from a recent examination of all of them there is not the slightest sign of recurrence. The treatment should be early and free extirpation.

Duct adenomas and carcinomas associated with duct cysts. — In the second lecture I considered certain cysts formed by dilatation of the ducts of the gland described by Birkett[25] as duct cysts. These are distinguished by the presence of a clear discharge, the fluid in consistence being thin or mucoid. Now if the fluid be of a different nature, brownish or blood-stained, this is indicative of a further development, the formation of intra-cystic growths. These cysts with a bloodstained discharge have been described by Velpeau[26] as sero-sanguineous cysts. To Brodie[27] and Bryant[28] we are indebted for excellent papers on this disease. It must be borne in mind that a brown-coloured discharge is not necessarily in relation with the development of a cyst growth, although such is very probable. It may be derived from a very vascular cyst wall, either from a blow or in association with menstruation. A discharge of pure blood is a certain indication of the presence of vegetations. On opening these cysts we find that the intra-cystic growths occur in two forms, as pedunculated tumours, single or multiple, or as sessile nodular tumours. The first resemble the duct papillomata. As far as the pathology and some of the clinical signs are concerned, we can practically make no distinction between the two: the duct cysts may exist for a considerable period without the origin of any growth, and when the latter does develop it bears a very small proportion to the cystic cavity; whereas the duct papillomata are associated with a generalised duct change and the cavities are not large, not exceeding in most instances the papillary growth, but only developing *pari passu* with it. These points of difference, although small, I think are quite definite between duct-cyst adenomata and duct papillomata. These pedunculated duct adenomata may be multiple and their prognosis appears to be favourable. I cannot find in recorded cases any evidence of recurrence where such a polypoid growth has been removed; and, on the other hand, the after-history of many states that four, five, or six years have elapsed with immunity. The sessile nodular growths have a broad base of attachment to the cyst wall and fill up a small part of its cavity. These solid masses are of a greyish or yellow colour, or black on the surface from hæmorrhage. Although the cysts may be multiple, the growths may only occur in one of them. The fluid in the cysts often contains cholesterin. The vegetations on section appear adenomatous and there is a marked tendency for the growth to extend outside the cyst wall into the tissues around. The very presence of such vegetations is sufficient reason for extirpation without any further evidence. If the tumour should prove malignant the glands are not implicated for some considerable time, thus early removal may mean very small probability of recurrence. The following is a very typical case: "J. E——, forty-seven, was admitted under the care of Mr. Clutton in September, 1890. She was married and had had four children. Ten years before there was a clear, oily nipple discharge, followed by a small swelling one year after, just to the inner side of the right nipple. This swelling grew painlessly till one year before admission, when, after a blow, it doubled its size and got hard and the discharge stopped. The latter reappeared six months later and a few weeks after was blood-stained. The nipple became retracted and other swellings developed in the neighbourhood of the first. On admission there was a large lump on the inner side, occupying about half the breast, with the skin stretched over it, but at no spot adherent. It seemed chiefly cystic, but solid growth could be detected. There were no enlarged glands. The left breast was normal. After removal the cysts contained a brownish fluid with cholesterin. The tumour was much stained from hæmatoidin. The largest cyst had a sessile nodular growth adenomatous in look (Fig. 5), which extended into the tissue outside the cyst; the smaller cysts were free. The intra-cystic growth was made up of dendritic processes, having a delicate fibrous framework, with a single layer of epithelial cells on it. (Fig. 6.) The growth infiltrating outside the cyst was tubular, with very scanty cell growth in the connective tissue. There has been no recurrence up to date." Specimens 4757 and 4759 in the Hunterian Museum are good examples of these nodular sessile growths. Bryant[29] quotes good examples of these cysts and growths showing their malignancy. Among them is the following case: "A woman of forty, married, had had a lump in the outer half of the breast for ten years, with bloody discharge. After removal she remained well till the axillary glands became involved two years and a half after. Two years later she died with tumours in the left humerus, left femur, os innominatum and vertebræ and also in the liver."

FIG. 5.



The malignant disease, then, may be implanted on these duct cysts. With its advent there may be pain and nipple retraction and the skin may become involved. The disease runs a slower course and the glands are not so frequently or

[20] Robinson: Trans. Path. Soc., 1891.
[21] Traité des Tumeurs Bénignes du Sein.
[22] Trans. Med. Chir. Soc., vol. xli.
[23] Trans. Path. Soc., vol. xxxix.
[24] Ibid., vol. xli.
[25] System of Surgery, Holmes and Hulke, vol. iii.
[26] Diseases of Breast, Syd. Soc. Translations.
[27] Lectures on Path. and Surg.: Sero cystic Disease.
[28] Guy's Hospital Reports, vol. xliii.: Cystic Diseases of Breast.
[29] Ibid., Cystic Tumours of Breast, vol. xliii.

early involved as in a scirrhus. If we have diagnosed a duct cyst with vegetations the cyst should be first incised. If the tumour is pedunculated a local removal may suffice, the cyst wall from which it springs and some of the surrounding tissue. Should the growth be nodular, although there may be no signs of evidence of carcinoma, yet it should be viewed with suspicion and complete removal of the gland is to be advocated.

Duct Cancer with Paget's Disease.—A certain number of the cases of chronic eczema are associated with a tumour in the breast. Bowlby,[30] out of twenty-three collected cases, found tumours in fourteen and Delbet's[31] list shows seventeen out of twenty-six. The breast tumours succeed the ezcema at a varying interval. What is the nature of the growth in relation with the eczema? Bowlby[32] says "in all these cases the new growth has run the usual course of a scirrhus and has been found on clinical examination to present the usual characters of this tumour"; and "with regard to the cancerous growth, all observers, with the exception of Dr. Thin, describe the tumours as scirrhus or spheroidal-celled carcinoma." He[33] gives the following description: "The tumour consisted of round masses of cells in an alveolar framework, with very little cell exudation and no appearance of small cell columns, as in scirrhus; the central cells are broken down and the outer cells are columnar." Barling[34] records a case of eczema of six months' duration where the nipple alone was affected and from it a cord

FIG. 6.

stretched to a nodule in the breast the size of a horse-bean. This on incision was of a yellow colour and appeared like an alveolar carcinoma, though in places it resembled a duct carcinoma. Jonathan Hutchinson, jun.,[35] remarks on the resemblance histologically to duct cancer.

The following tumour implanted on a chronic eczema was an undoubted duct carcinoma resembling the structure of the firm circumscribed tumours before described:—"M. G——, aged sixty and married. Soreness and discharge from the left nipple for two years. Four months before admission noticed circumscribed near nipple which was painless. The tissue between nipple and tumour seemed free. One gland in axilla. The tumour on section was made up of a number of cystic spaces filled with filings of epithelium very easily detached. (Fig. 7.) Histologically these large spaces are lined by a many-layered epithelium the deep cells of which are columnar. In the centre there is a large amount of granular material. The tissue between the tumour and nipple showed dilated ducts with proliferating epithelium and some small-celled exudation around. The skin presented the forms in the epithelium described by Darier and Wickham as coccidia. This tumour recurred eighteen months after, with marked enlargement of axillary glands."

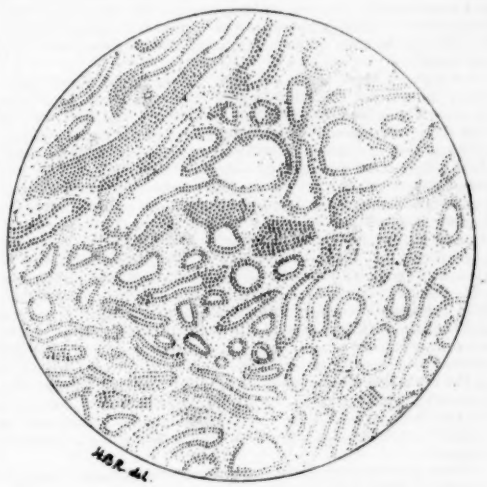
If there is any truth in the view that psorosperms are the cause of Paget's disease, it seems reasonable to suppose that if the disease has a growth in a breast it is due to the same cause. In passing along the ducts it is probable that some change would be produced here and such seems to have occurred, the tumour formed resembling duct cancers.

FIG. 7.

A point that has been urged against these tumours being allied to the duct carcinomata is that the latter are usually soft and the glands are not involved. This argument we know is not tenable after a consideration of the clinical course of the firmer duct tumours.

In quite an early stage of the eczema the structure of the

FIG. 8.



nipple may show very marked changes. The ducts have their epithelial lining proliferating and they are dilated. (Fig. 8.) This condition I found in a man of fifty-six[36] and it had given him no inconvenience. The case had additional interest because the patient had a very advanced carcinoma of the tongue.

[30] Med. Chir. Soc. Trans., 1891.
[31] Traité de Chirurgie, tome vi.
[32] Med. Chir. Trans., 1891.
[33] Trans. Path. Soc., vol. xxxii., p. 218.
[34] Ibid., vol. xli., p. 219.
[35] Ibid., vol. xli., p. 214.

[36] Ibid., vol. xli.

AN ABSTRACT OF

Lectures

ON THE

TREATMENT OF SURGICAL TUBERCULAR DISEASES.

Delivered at the Royal College of Surgeons of England in June, 1892,

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LECTURES II. & III.

MR. WATSON CHEYNE illustrated the value of extension in tubercular disease of the spine with paralysis. The chronic inflammation of the bone in cases of spinal disease is kept up by the presence of the tubercle, by the weight of the upper part of the body and by the pressure of the inflamed vertebræ against each other as the result of the tonic contraction of the surrounding muscles. This chronic inflammation may extend to the meninges, leading to thickening and paralysis from pressure. In other cases these thickened meninges become infiltrated with tubercular tissue or a chronic abscess forms in the vertebral canal, both of these conditions also leading to pressure on the cord and paralysis. This condition of pachymeningitis is kept up to a great extent in unison with the osseous inflammation by the action of the weight of the body and of the muscular contraction, and therefore it is clear that the first indication as regards treatment is to see what can be done by relieving these conditions. This is best done by complete recumbency and the application of extension to the head and feet rather than by having immediate recourse to laminectomy. The effect of the muscular contraction in producing curvature and leading to the extension of the disease is not sufficiently realised and hence it has been thought by some that the object of the double extension is to undo the curvature, on the supposition that the paralysis was due to actual pressure of the bone. This is, however, not the case; the object of the extension is to overcome the muscular contraction and thus lead to diminution of the inflammation and absorption of the inflammatory material and consequently to relief of the pressure on the cord. The lecturer mentioned three cases in which the operation was avoided by the employment of rest and double extension. He continued:—

"I believe that most cases would yield to that treatment, but I am far from saying that laminectomy is not necessary in some cases. What I wish to urge, however, is that the operation should not be performed till double extension and rest in the recumbent posture have been thoroughly tried. The same principle of extension first followed by the use of proper retentive apparatus is, I believe, the best routine treatment wherever applicable in the case of tubercular joint disease where there is either superficial or deep disease of bone as evidenced by fixation &c. In hip-joint disease, for example, it is, I think, too much the fashion to order a Thomas's splint and let the patient get about on crutches at once. I quite admit that it is almost impossible to do otherwise in hospital practice, but when the patient can be put to bed for six or eight weeks I am sure it is best, where there are signs of bone trouble, to begin with treatment by light extension, generally three or four pounds, reducing the weight as the muscular resistance diminishes. In this way also the deformity can be most quickly and satisfactorily overcome. At the end of that time the patient can be fitted with a Thomas's splint so modified as to overcome the adduction properly.

"Counter-irritation is a favourite remedy in cases of simple chronic inflammation and was formerly much employed in tubercular disease, but now, under the erroneous idea that the only object of local treatment in these cases is to act directly on the tubercular tissue, it is falling into disuse. As I am trying to show, however, a great deal can be done in these cases by getting rid of the attendant chronic inflammation, and for this purpose the severest forms of counter-irritation—blisters and the actual cautery—are of value in suitable instances. In cases of pure synovial disease improvement sometimes follows blistering, but where the bone is inflamed and is deep-seated the most effectual method is the application of the actual cautery. The most suitable parts for this treatment are the hip and shoulder joints and the spine. I have not seen much good result from the use of the cautery in pure synovial disease and in the case of superficial joints, such as the knee, I should fear that it would do harm by increasing the congestion of the synovial membrane. In applying the cautery in cases of bone disease it must be done freely by means of a broad flat cautery at white heat passed rapidly two or three times over a considerable area of skin; in the case of the spine, on each side of the spinous processes; in the case of the hip and shoulder, both in front of and behind the joints. After the application of the cautery warm boracic fomentations are applied till the slough separates and then savin ointment, either pure or diluted with vaseline, is used and the sore kept open for about six weeks. I believe the best results are obtained when only the superficial portion of the cutis is destroyed and where, therefore, many nerve terminations are exposed. The objection to this is that it is very difficult to keep these sores from healing rapidly and savin ointment often causes such pain that it cannot be employed. Under such circumstances it may be necessary to open up the sores as they heal by potassa fusa, nitrate of silver, or fresh application of the cautery.

"Another method of treatment which is commonly employed in the treatment of simple chronic inflammation with the very best results is to make free incisions into the inflamed tissues, aseptically, of course, on the principle of relief of tension. In the case of chronic periostitis there is no more effectual remedy than to make free incisions through the inflamed periosteum and in the case of osteitis, to gouge the inflamed bone extensively. In other cases also, especially in tense collections of fluid, the relief of the tension often leads to a cure. A good many years ago Sir Joseph Lister attempted to apply this same principle to the treatment of chronic synovial disease—the tubercular nature of the affection not being at that time thoroughly understood—and with a certain amount of success. The treatment probably acts, as I have said, by relief of tension and consequent subsidence of inflammation. That there is a considerable amount of tension in the part is evident from the way in which the wound gapes when the incisions are made. It is possible also the treatment may be efficacious in another way, for as the wounds heal the young tissue contracts, and this pressure may exercise a beneficial effect. Where the result is partially successful it is not unusual to see a depressed scar at the seat of incision, with little or no thickening in its immediate neighbourhood, great improvement or even cure of the disease having occurred around the incisions, but not elsewhere. Lastly, there may possibly be some meaning after all in the old formula of the induction of healthy action in the part. The process of repair going on actively and well at one part may in some way that we do not understand exercise a favourable influence on the neighbouring diseased parts. That good results may follow simple incisions into joints the seat of tubercular disease is not more surprising—indeed not so surprising—as that good results follow simple laparotomy in cases of tubercular peritonitis; and yet there are now numerous cases on record in which the abdomen has been opened in cases of tubercular peritonitis either intentionally or by mistake, and where, though nothing further was done, though the wound was simply stitched up again, considerable improvement, in some cases apparently cure followed the incision. With our present improved methods of performing arthrectomy and treating chronic abscesses I think that simple arthrotomy has a comparatively small field. When we have once gone so far as to lay open a joint we may as well go somewhat further in most cases and remove at least as much of the tubercular tissue as is easily accessible. At the same time, there are some cases in which the disease is more or less stationary, or only progressing slowly, where an aseptic arthrotomy is sufficient to lead to recovery taking place. The cases most likely to do well are those where the thickening of the synovial membrane is not very great and is firm, and where on cutting through it no cheesy or softened spots can be seen. Of nineteen cases of knee-joint disease treated in this wa nine got well. So far the methods considered do not act on the bacilli directly, they only aim at improving the general nutrition of the tissues or diminishing or removing the inflammation around the tubercular deposit, thus putting the tissues in a better position to resist the invasion and destroy the parasite. I must now pass on to the consideration of the

means which act more directly on the parasite and the tubercular tissue.

"Before going on to the operative measures I may say a few words about Koch's tuberculin treatment. I need not go into any detail as to this matter because I have nothing new to say, and the conclusions to which I have come are very much those which I mentioned as provisional conclusions in the paper which I read at the Medico-Chirurgical Society now more than a year ago. At that time I held that the direct risks of the treatment were much overrated, more especially the risk of acute tuberculosis and I still think that this is the case. In none of the cases in which I used tuberculin—nearly sixty in number—did acute tuberculosis occur, while curiously enough three out of nine cases, on which I was consulted or in which I considered the advisability of the treatment but decided against it, died of tubercular meningitis, and one developed an acute tubercular joint disease about fourteen days after we had determined not to employ tuberculin. In my opinion the two great dangers of this treatment are (1) its use where there are septic cavities or surfaces and (2) leaving it off too soon. As regards the first danger, the chief trouble lies partly in the increase of the inflammation as the result of the action of the tuberculin and partly in the weakening of the tissue by this inflammation allowing the pyogenic organisms to penetrate further and more rapidly. As regards the second danger, that of leaving off the treatment too early, it certainly is the fact that under such circumstances recurrence takes place quickly and in my experience the disease seems to progress more rapidly than before the treatment was employed. I do not think that I can say the same when the treatment has been continued for some months and then left off; at any rate, speaking of lupus, while under these circumstances it has recurred in places pretty quickly at first, it has afterwards seemed in several cases to come more or less to a standstill, or even to improve somewhat. Certainly in several of the cases the condition of the patient some months after the treatment was stopped has not been so bad as before it was commenced, nor so bad as it seemed likely to become when recurrence first began to take place. As to the remedial powers of tuberculin, there can be no doubt that in many cases where the conditions are favourable a certain amount of improvement follows its use, which, however, but rarely ends in a cure of the whole area within a reasonable time. In only three of the cases where no operation was performed has the improvement been complete and lasting over the whole surface. These were two children with synovial disease of the knee-joint and one patient with phthisis. In all three cases the treatment was continued for about five months and these patients remain well. Four other cases where sinuses were present which healed at the time remain healed. In all the others in which the treatment has been stopped recurrence has taken place; but in several bad cases of lupus considerable tracts which were previously diseased have remained well, showing, along with the cases just mentioned, that tuberculin really has the power of causing the permanent disappearance of tubercular tissue under certain conditions. From the microscopical appearances I conclude that the main condition is that the tubercles shall be isolated and not aggregated into masses. Isolated tubercles seem to be readily infiltrated with inflammatory cells and disappear, while only the external portions of tubercular masses are in relation to the blood stream. As it is very rarely that in the tubercular area there are only isolated tubercles or very small groups of them, it is very seldom that a complete cure can occur, at any rate within a short time. Although, however, larger masses are not destroyed by tuberculin, their growth is brought to a standstill for a time at least, and the question is for how long this condition of standstill can be kept up. This seems to vary very much in different cases; but, on the whole, when the injections are given frequently in the manner which I recommended in my paper I think that the disease may in a good many cases be kept in check for a long time. In only two of my cases are the patients still going on with the treatment—viz., in two medical men with phthisis—and these patients, though very ill and rapidly going downhill when the treatment was commenced, quickly picked up, even though staying in London during cold and very foggy weather. They have now been at work for more than a year as surgeons on board ships and have no symptoms of disease. They inject themselves every day or every other day, and, if they follow my advice, will continue to do so indefinitely. On the whole, I think that considering the indefinite length of time that the treatment must be continued and the danger of leaving it off, it does not come into play in those cases of external tuberculosis which are accessible to other local measures. On the other hand, in phthisis I think that the treatment has been unduly discredited and too hastily abandoned, and in some cases of internal tuberculosis which come under the care of the surgeon and where no really radical measures can be adopted, as in the cases of bladder tuberculosis previously mentioned, the use of tuberculin or one of its constituents may be of some assistance in retarding the progress of the disease.

"Various substances have been used both generally and locally with the view of interfering with the growth of the bacilli, but without any special advantage. It has always seemed to me that something might be done by trying to saturate the tissues with some harmless substance which would render the soil unsuitable for the growth of the tubercle bacillus and among other things I have tried the benzoate of soda with doubtful success. Further, attempts have been made by injecting solutions of various substances into or around the tubercle to cause calcification (Kolischer with phosphate of calcium) or encapsulation (Lannelongue with chloride of zinc) of the tubercle, but without any real advantage. Various antiseptics have also been injected into the tubercular tissue with the view of destroying the bacilli—for example, carbolic acid, creasote, guaiacol, &c.; but these substances have failed in their object and only irritate and weaken the tissues and enable the bacilli to spread. For example, the infection of animals by inhalation of dried sputum is rendered more certain if at the same time inhalations of sulphurous acid are administered; and the result of the employment of inhalations of creasote in rabbits which are already tuberculous is not to prevent the disease in the lungs but actually to make it spread more extensively than in the control animals. There has been much controversy as to the anti-parasitic and anti-tuberculous action of iodoform. Certainly no true anti-parasitic action can be produced outside the body. Organisms grow, though perhaps more slowly, on substances covered with iodoform. Indeed, septic infection has occurred in wounds from powdering them with dry iodoform and therefore in an operation where the skin is previously unbroken iodoform cannot be recommended as an antiseptic; and yet if it is employed as an application to a putrid sore the smell very soon disappears and suppuration diminishes. As an explanation of this fact it has been stated that while pyogenic organisms grow in material containing iodoform their poisonous products are apparently decomposed as soon as they are produced, and this decomposition is accompanied by breaking up of the iodoform, the free iodine possibly then acting destructively on the organisms. If the bacterial products are thus broken up the bacteria will be deprived of their weapons, without which they cannot do much harm, and will be more rapidly destroyed by the tissues. Thus iodoform may really be of some use in tuberculosis. It has been recently pointed out by Krause that iodoform acts better in closed cavities, such as abscesses than on a free surface and that better results will be obtained by packing tuberculous wounds with gauze saturated with iodoform than by sprinkling it over the surface. Certainly I have had several cases lately which seem to confirm this view where tubercular sinuses have done extremely well by slitting them up and stuffing them with iodoform gauze, better than formerly by scraping and draining them or injecting iodoform and glycerine."

Reference was then made to the question of cases suitable respectively for expectant treatment and for operation, and the various points which influence the decision were discussed. [See a paper on this subject in THE LANCET for October, 1890.]

LECTURE III.

The modes of complete removal of the disease in cases of tubercular joint affections are three in number—viz.: (1) complete removal of the diseased tissues along with as little as possible of the healthy structures—i.e., arthrectomy; (2) removal of the diseased tissues, along with certain portions of the ends of the bones whether diseased or not—i.e., excision; and (3) amputation above the affected joint. Arthrotomy has been already discussed, and it was pointed out that it was only suitable for very few cases, and that if a joint was opened it was best to remove at least a portion of the affected tissues. This question of partial arthrectomy will be again referred to. Many circumstances influence the choice of the operative measure, the chief of which are the age, the general condition of the patient and the local condition. As regards the treatment of chronic abscess, drainage

is almost entirely given up and more radical measures are adopted: 1. A chronic abscess being a tubercular tumour with softened centre the ideal treatment is to dissect it out as one would dissect out a cyst, and this is what I always do when the situation and size of the abscess permits. Where the abscess has started from a tubercular deposit in the bone the removal of the abscess and the affected bone leaves a clean cut wound which heals by first intention and thus the process is cut short. For example, in chronic abscess connected with a carious rib a cure is at once obtained by dissecting out the abscess and removing the affected part of the rib. 2. Where it is not possible to dissect out the wall on account of its size and connexions the next best thing is to make a large opening into it sufficient to admit the hand if possible and try to peel and dissect out the wall; of course if the abscess has started from a deposit in bone, that ought also to be removed if accessible. 3. Failing either of these plans there remains the method of making a smaller incision into the abscess, and attempting to get rid of the wall as thoroughly as possible by scraping with sharp spoons, rough sponges &c., washing out all the débris, perhaps filling the cavity with a 10 per cent. emulsion of iodoform in glycerine, and stitching up the wound. By this means healing can usually be obtained though the process may have to be repeated more than once; the bone deposit, if present, cannot however be satisfactorily cleared out.

Another important factor influencing the nature of the operation is the septic or aseptic condition of the part. Sepsis aids the spread of the tubercular disease, both locally and generally, and also complicates the operative procedures, because it introduces the risk of the various septic diseases; hence it often necessitates the employment of more severe operative procedures than would otherwise be necessary. Hence in treating a case of tubercular disease with septic sinuses it is, I think, advisable in most cases to do more than merely put the part at rest; some operative treatment should as a rule be adopted. Where it is not deemed desirable to proceed to radical measures I believe the best treatment is to lay the sinuses freely open, scrape or clip away the walls, remove as far as possible the starting point of the original abscess, sponge the surface with undiluted carbolic acid, stuff the wound with iodoform gauze or with cyanide gauze freely sprinkled with iodoform and allow it to granulate from the bottom. My experience is that much better results are obtained in this way than by simply enlarging and scraping out the sinuses and inserting a drainage-tube, as was the method formerly employed. In cases of joint disease, however, this method is only rarely applicable, and in most cases where sinuses lead into joints or are multiple and where the disease is advancing, one of the three radical measures must be adopted. At one time I was inclined to think that the presence of septic sinuses excluded arthrectomy, but I have now done several complete arthrectomies in such cases, sponging the surface of the wound afterwards with undiluted carbolic acid and with good results.

The next point considered was as to the desirability of performing partial operations. Where subsequent mobility is desired, a great objection to complete arthrectomy is that the fibrous capsule is often also removed and that the ligaments must be divided in order to get at the whole of the joint, and thus its strength and mobility are impaired. At first it seemed to me probable that complete removal of the disease was not always necessary and that a partial arthrectomy might be sufficient in a certain number of cases; the grounds for this belief were the good results of expectant treatment, of arthrotomy, actual cautery, aseptic drainage of abscesses, tubercular peritonitis &c., showing that comparatively little is required in some cases to turn the scale in favour of recovery. In excisions also, as formerly performed, no attempt was made to remove all the diseased tissues and yet healing occurred in a considerable number of cases, although it is true fistulæ frequently remained open for a long time. The results of partial arthrectomy in the case of the hip-joint and knee-joint were mentioned. In the case of the hip-joint a complete arthrectomy is very difficult, but the lecturer mentioned five cases in which he had performed a partial arthrectomy; in three of them with the view of removing tubercular sequestra, which were evidently present in the neck of the bone.

The lecturer confessed that on the whole he was disappointed with the results obtained by partial arthrectomy and the conclusion he had come to was that this operation has only a very limited field, and that in most cases where it becomes necessary to remove diseased tissue complete removal is preferable. In a few cases, however, partial arthrectomy may be of use. In some cases in the knee-joint also it may be sufficient, especially in cases where on cutting into the joint the synovial membrane is found not to be markedly pulpy, where the disease is in the substance of the membrane, not on its surface, and does not affect the bone, and where no cheesy spots are present. In other cases it is best to go on to complete removal of the affected tissues. Mr. Watson Cheyne said:

"By arthrectomy I understand all operations by which the whole of the tubercular tissue is removed along with as little as possible of the surrounding healthy tissue. We may perform a complete arthrectomy without opening the joint at all, as in the hip-joint case, where I tunnelled along the neck of the femur, or without removing any tissue from the joint, as in the elbow case, where I removed the tubercular deposit from the external condyle, or with the removal of a limited portion of the synovial membrane, as in the other elbow-joint case mentioned. I term the arthrectomy 'complete' when the disease is completely removed, not necessarily when the whole of the structures of the joint are cut away. As a rule the operation is a very extensive one, and requires much patience and great care for its satisfactory performance, because the whole synovial membrane at least is involved. The diseased tissue must be removed by careful dissection; scraping is quite unsatisfactory, except perhaps as regards small points, especially in the cartilage, and if employed it must be very thoroughly done. Let me describe a complete arthrectomy of the knee-joint, where the whole synovial membrane is involved. The first thing is to expose the capsule very thoroughly, and this I do by means of two free longitudinal incisions, one on each side of the patella at a little distance from it, and I think it is best in the first instance not to open the joint. Having made out the limits of the capsule the tissues in front of the synovial membrane are carefully dissected off and the whole of the membrane behind the quadriceps is thoroughly exposed. The dissection is then carried to each side over the condyles, remembering that a fold of synovial membrane extends backwards for a considerable distance over the surfaces of the condyles; the lateral ligaments are then divided and the synovial membrane separated from them. The dissection is then continued inwards to the edge of the patella on each side and behind the ligamentum patellæ. The membrane is next detached all round where it is reflected on to the cartilages of the various bones and cut away as far back on each side as possible. The joint is thus freely exposed from the front and a fringe of synovial membrane is seen around the edge of the cartilages of the femur, patella and tibia; this is carefully removed, and then one may or may not connect the two longitudinal incisions by a transverse one over the patella, sawing that bone transversely. Usually I have not required to do this, but by dislocating the patella first to one side and then to the other I have been able to get free access to the whole joint. The crucial ligaments are next divided and thoroughly cleaned, or, if much diseased, removed, and special attention is directed to the condition in the intercondyloid notch. The joint being then forcibly bent the semilunar cartilages are removed and the dissection of the synovial membrane is resumed. It is quite easy as a rule to define the outer part of the synovial membrane on each side, and having done so separation is gradually effected by the finger or some blunt instrument between the posterior part of the capsule and the vessels and structures behind, and this is continued till the points of reflection of the capsule behind on to the femur above and the tibia below are well defined. The synovial membrane is then cut off at these points and the fringe around the cartilages carefully removed. Having now got away all the synovial membrane the ends of the bones are easily protruded through the wound and the cartilages carefully examined. If any depressions are seen they are carefully cleaned out; if they are loose or thinned anywhere that portion is removed along with a thin layer (quarter of an inch) of the bone beneath. Very often the cartilages are covered with a thin layer of soft tissue and this must be got away either by scraping the surface with the edge of the knife or by scrubbing it with a nail-brush. If the cartilage is absent at any part and the surface of the bone carious, a thin layer of the bone is cut away at that part, bearing in mind that the tubercular tissue only extends into the bone for about one-eighth of an inch; this layer can usually be removed by the knife. Of course if at any part the hole in the cartilage or the carious patch of bone is found to lead to a deposit in the bone that must be

thoroughly cleared out. Having satisfied ourselves by fresh inspection that all the disease has been removed the wounds are closed, the crucial ligaments if left being stitched, and the patella if divided being wired. A drainage-tube is seldom necessary, or if used should be removed in two or three days. I think it is best in most cases not to use a tourniquet; it is easier without it to distinguish disease; the pulsation of the popliteal artery can be felt, which is of importance in dissecting out the synovial membrane posteriorly and the oozing from the wound is less. Subsequently no passive motion should be employed, and as there is a very great tendency to flexion in children a back splint should be worn for a long time, sometimes for years."

The procedure in other joints is essentially the same. In the hip it is necessary to add a posterior incision to the ordinary anterior one for excision. In the ankle good access is obtained by a long longitudinal incision in front of each malleolus, removing the anterior part of the synovial membrane in the first instance and then either removing the astragalus or dividing the malleoli in order to get access to the rest of the joint. Mr. Cheyne prefers the removal of the astragalus and has had several cases, all with most satisfactory results, the disease being eradicated and an excellent movable joint obtained; indeed it would be difficult to say in these cases that the astragalus had been removed. In the elbow longitudinal incisions over each condyle were recommended without division of the olecranon, care being taken on the outer side to avoid the posterior interosseous nerve. The wrist-joint is rarely affected in children and complete arthrectomy as distinguished from excision of the carpus cannot be done. In the case of the tarsus it is sometimes possible, by removal of individual bones with the surrounding synovial membrane, to cut short the disease at an early stage and obtain an excellent functional result. The lecturer had had several cases where it is now impossible to tell that anything had been removed. The lecturer then said: "The conclusion which seems warranted by all the facts is that arthrectomy is the proper radical operation in children up to fifteen or sixteen years of age and excision in patients who have reached their full growth. As regards the hip-joint a really complete arthrectomy is almost impossible, but in children I think that in many cases partial operations—such as clearing out abscesses, partial arthrectomy &c.—are often preferable to excision as regards the ultimate result, though no doubt there are cases where removal of the head of the bone is desirable. For example, in primary acetabular disease, with or without abscess, inside the pelvis satisfactory access can seldom be obtained without removing the head of the bone. Again, where the head of the bone is much diseased, or the epiphysial line destroyed by the tubercular deposit it is better to cut through the neck. And also in cases with septic sinuses where operation becomes necessary slitting up the sinuses, excision of the head of the bone and subsequent stuffing of the cavity with iodoform gauze is probably the best practice. Apart from the question of shortening, which is not so very great if only the head of the femur is removed, excision leaves a weaker and less stable joint than is obtained in other ways. In the case of the knee-joint arthrectomy possesses no advantage over excision as regards the immediate result. On the contrary, as a stiff joint is what one aims at, a firmer result will be obtained by excision; but in patients who have not reached their full growth the interference with growth after excision is so serious that it should not be undertaken. Certainly in young children excision of the knee-joint is not to be thought of for a moment. In adults, however, a better ankylosis is obtained by excision and in my opinion it is the preferable operation. In the case of the ankle arthrectomy, with or without removal of the astragalus—I think in most cases with—is the preferable operation for children and gives most satisfactory results. I have not had the opportunity of trying it in adults, as the cases of ankle-joint disease which I have lately had have either not been limited to the ankle or if requiring operation have necessitated amputation, but I should be very much inclined in a suitable case in an adult to perform arthrectomy with removal of the astragalus instead of excision. The remarks which I have made as regards the knee apply also in the main to the elbow. Arthrectomy is the operation for children and very satisfactory movement is thereby obtained. Excision is, however, I think a better operation for adults; movement is more easily obtained and the disease more readily eradicated. As regards the wrist and tarsus, complete arthrectomy is of course impossible, and in children I should do what I could with partial operations. Fortunately wrist-joint disease is not common in children, and in adults excision often gives a very good result. In the case of the tarsus in children it is sometimes possible, as I have already mentioned, to get an excellent result by removal of the affected bone and synovial membrane or of a healthy bone, such as a cuneiform, so as to get at the synovial membrane. The shoulder stands, I think, on the same footing as the hip in childhood, but it is essentially a disease of adult life, and in adults excision is the radical treatment."

THE ELIMINATION OF WATER AND THE PATHOLOGY OF DROPSY.

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IN the debate on Dr. Dickinson's paper on Renal Dropsy[1] at the Royal Medical and Chirurgical Society on May 11th, I made a few remarks on these points, and I propose in this paper to state more definitely and distinctly what I know about the elimination of water from the body and the way in which I think it bears on the pathology of dropsy. To do this as completely as possible I shall examine the matter in its physiological, experimental, clinical, and pathological bearings, and shall point out that in physiology there are certain conditions to be met with every day in which though there is an excess of water in the blood and tissues of the body it is nevertheless unable to pass out either by the kidneys, the skin, the lungs or the glandular secretions; in other words, it is held back and retained in the body. In experimental work I shall point out that bearing in mind the physiological conditions that determine the excretion or retention of water it is possible to increase or diminish its excretion by the kidneys at pleasure. With regard to clinical work I shall point out that precisely the same thing holds in disease, and that, speaking generally, in pathology just as in physiology the urinary water is from hour to hour and day to day inversely as the uric acid excreted along with it. I shall further point out that the action of a large number of so-called diuretic drugs is due solely to their action on uric acid, and that certain disease processes which similarly affect the excretion of uric acid act in the same way as regards the elimination of water. Lastly, in pathology I shall show that the same factors which we have met with in physiology do here also account for the retention and accumulation of water in the body, and so for the most important point in the causation of dropsy, and that this knowledge of causation gives us very great power over the phenomena of disease. Before I begin I must state one point clearly, because it is the peg upon which all the rest hangs—namely, that, other things being equal, the urinary water is from day to day and from hour to hour inversely as the uric acid excreted along with it, because a part of the uric acid excretion passes through the general circulation and contracting the arterioles and capillaries prevents for a time the excretion of water. The first part of this statement is a fact which can easily be observed by anyone, and which, as I have pointed out in the *Journal of Physiology*, vol. xiii., is as well seen in the researches of others as in my own. The second part is my explanation of the fact, for the full discussion of which I must refer my readers to my book[2] (p. 100 and elsewhere).

In making the above statement I do not intend to pass over the action of other factors, such as perspiration and digestion, on the excretion of water, for I know very well that profuse perspiration may reduce the hourly excretion of urine to very small proportions indeed, and that during active digestion the excretion tends to be small, quite apart from the action of uric acid. Nevertheless, apart from the excessive action of these factors, the effects of uric acid on the excretion of water are generally plainly visible either from hour to hour or from day to day. To illustrate these points I will now give a few figures from my last six months' work at the excretion of uric acid and urinary water. Here we have 148 nearly consecutive days in which the hourly excretion of water in sixteen hours of the day ending 10.30 P.M. averages 54 cc., and in eight hours of the night 72 cc.

[1] THE LANCET, vol. i. 1892, p. 1082.
[2] Uric Acid as a Factor in the Causation of Disease. J. & A. Churchill. 1892.

Now, it is well known that the excretion of uric acid is just the reverse of this, being most in the day and least at night; and in my book (previous reference page 16) there is a figure showing the large excretion of urates in the day hours and it further shows that when uric acid comes below urea the water at once rises. If we take single days out of the same 148 days the same thing is again seen. Thus I give five days in which the excretion of water was at its lowest and five days in which its was at its highest, giving the relation of uric acid to urea corresponding to each.

Date.	Water in cubic centimetres.	Relation of uric acid to urea.
Jan. 17th	840	1 to 22
Jan. 29th	900	1 to 17
Dec. 3rd	920	1 to 24
Jan. 7th	930	1 to 23
Feb. 6th	930	1 to 24
Oct. 28th	2100	1 to 30
Nov. 5th	2070	1 to 30
Oct. 16th	2000	1 to 32
Oct. 22nd	2000	1 to 32
March 9th	1990	1 to 36

Note.—**Only the relative excretion of uric acid is here given for reasons which will be found elsewhere (Ibid., p. 12).**

It will thus be seen that, though speaking generally, there is less uric acid when there is more water and *vice versâ*; they do not absolutely correspond, as there is less water with an excretion of 1 of uric acid to 36 of urea than with 1 to 30, and again there is more with 1 to 17 than with 1 to 22. But this is simply because other things are not equal; when there is no excess of fluid in the body relaxing the arterioles will not cause diuresis, and conversely when water has been held back for several days relaxing the arterioles will cause a correspondingly great diuresis and still more is this the case in dropsy, as we shall see presently. Still, other things being equal, the effect of uric acid is quite plain and distinct and the water is either from day to day or hour to hour inversely as the uric acid.

If we now turn to the experimental aspect of the question the same fact stands out even more clearly; for all drugs that hinder the solubility of uric acid and clear it out of the blood relax the arterioles and cause diuresis, and indeed not a few drugs whose diuretic action is well known owe this property entirely to their action on uric acid and so indirectly on the arterioles. Thus opium, mercury, iodide of potassium and other iodides, salicylate of soda, caffeine, and lithia salts, all produce more or less diuresis and diaphoresis, and all have this also in common—that they clear the blood of uric acid. Opium is often used, either alone or in combination, for its diuretic or diaphoretic properties. I have shown that it raises the acidity, diminishes the excretion of uric acid, and clears the blood of it.[3] A good deal has been written about the diuresis produced by mercury and I have shown that it forms an insoluble compound with uric acid, clears it out of the blood and relaxes the arterioles.[4] Iodides also are fairly well known as diuretics, and my researches show that at the time they cause diuresis they diminish the excretion of uric acid and clear it out of the blood, thus allowing the arterioles to relax. Further, the uric acid thus held back passes through the blood when the drug is left off, causing contracted arterioles, headache and scanty urine; in fact, a rebound, just such as is met with after opium, mercury, iron, lead, lithia, or any other members of this group. A good deal also has been written about the diuresis produced by salicylate of soda,[5] but its effects in this direction are entirely dependent on the fact that it clears the blood of uric acid. Unlike the drugs I have already mentioned, it clears the blood of uric acid, not by rendering it insoluble and retaining it, but by rendering it soluble and producing its elimination by the kidney, and a knowledge of this fact gives us the explanation of an important point in which the diuresis produced by a salicylate differs from that produced by the before-mentioned drugs. Take a dose of opium, mercury or an iodide, the diuresis they produce comes quickly within a few hours of swallowing the dose—i.e., they quickly clear the blood of uric acid and relax the arterioles; but with a dose of salicylate this is not so. Take fifteen grains of salicylate of soda three or four times in one day, the urine will not be at all profuse; on the contrary, it will be rather scanty. Continue the same dose next day and towards the end of the second twenty-four hours there may be a marked diuresis.

Now, the explanation of this is simple. On the first day of its action the salicylate meets with a large amount of uric acid and passes a great deal of it through the blood and out by the kidney. The arterioles are consequently contracted and there is no diuresis. On the second day, however, the immediately available supplies of urate run short and excretion falls down almost to the level of formation. There is but little urate in the blood, the arterioles can relax and diuresis results. If a patient has a large amount of urate in store the diuresis with salicylates may not occur till the third day, but in my own case it comes almost invariably about the end of the first thirty-six hours. It is evident then that the diuresis produced by a salicylate is not due to its direct action on the arterioles, but to its indirect action on the amount of urate contained in the blood and varies in accordance with the amount of this substance that it meets with. Precisely the same thing holds with the alkalies, soda and potash, as we shall see presently. Their first action is to increase the excretion of urates and the amount of these passing through the blood. The arterioles are therefore contracted and the urinary water is scanty. Later on, when they have eliminated most of the urate, the arterioles relax and there is a diuresis, or if the alkalies are left off this occurs at once, but as alkalies are much less powerful excretants of urate than salicylates the blood is not so quickly cleared of urate and the relaxation of arterioles and diuresis do not occur for several days. Caffeine is well known to cause diuresis. I have pointed out that it diminishes the excretion of urates and relaxes the arterioles. It is also well known to be useful in conditions of migraine and depression, no doubt from its action on the urates in the blood. Salts of lithia, again, produce a marked diuresis and this diuresis comes quickly, resembling that produced by opium, mercury and the iodides and differing from that produced by salicylates. But lithia salts act as alkalies, increasing the alkalinity of the blood and diminishing the acidity of the urine and we have just seen that the alkalies (soda and potash) increase the excretion of urates and diminish the urinary water. Here again, as in the case of salicylates, we have the most absolute proof that the scanty urine or diuresis produced by drugs is due not to their action on the vessels, but solely to their influence on the solubility and excretion of urates, which have a powerful influence on the vessels. What is the action of lithia salts on the excretion of uric acid? They greatly diminish the excretion of uric acid, clearing it out of the blood and relaxing the arterioles; hence they produce diuresis.[6] Soda and potash increase the uric acid and diminish the water.

I now come to a very interesting point in which my researches on these matters have been beautifully confirmed by those of others and where also what was a blank in my research has been filled in in a manner which leaves little to be desired on the score of completeness. For in a valuable note in THE LANCET[7] I find the following taken apparently from a thesis for the degree of M.D. of the St. Petersburg Medico-Chirurgical Academy under the heading "Effect of Alkalies on Metabolic Change." "As the effect of alkaline drugs on the nature of the metabolic changes which albumen undergoes in the system has not been satisfactorily worked out, Dr. Yavein has made a series of elaborate observations on the subject, employing citrate and carbonate of soda for the purpose. The daily quantities of the drugs administered were 300 grains or more. The result showed, as a rule, that there was but little effect on the assimilation or on the metabolic change of albumen. There was, however, a considerable increase in the neutral phosphates as compared with the acid phosphates of the urine. As a rule the loss from the skin and lungs was diminished and after the alkali had been discontinued the quantity of urine increased. The body weight increased while the alkali was being taken and decreased afterwards, the increase being probably due to the diminished loss of moisture and the decrease to the augmented secretion." I have quoted this annotation in full because almost every word of it bears importantly on what I am saying.

With regard to the effects of alkalies on the excretion of urinary water, I could have told Dr. Yavein all about this

[3] Ibid., p. 32 and elsewhere.
[4] Ibid, p. 36.
[5] Huber, in Deutsch Archiv für Klin. Med., xii., p. 129

[6] See Uric Acid, p. 29, and Med. Chir. Trans., vol. lxxi., p. 287. THE LANCET, vol. i. 1892, pp. 329 and 882.

several years ago and I could also have told him the way in which they produce these effects. I could have told him also that they diminished the excretion of water from the skin and that in the glandular secretions generally. But I did not know (and if his observations are confirmed they will constitute a most valuable addition to our knowledge in many ways) that the loss of water from the lungs is diminished at the same time with that from the kidneys, the skin and the glands. If this is the fact, it shows at once that when uric acid contracts the arterioles it contracts them all over the body and not only obstructs the exit of water from the kidneys, the skin and the glands, but also from the lungs. If this is true, we come at once in sight of a possible explanation of the undoubted clinical connexion between phthisis, chronic bronchitis and asthma, on the one hand, and gout and Bright's disease on the other. I have always inferred that uric acid, when it contracted the arterioles of the general circulation, also contracted those of the lungs; but if Dr. Yavein is right, we have here a method by which this effect on the lungs can be estimated. It may interest Dr. Yavein to know that I have pointed out that the valuable researches of Dr. Lauder Brunton prove that drugs like digitalis which contract the arterioles, diminish or even completely arrest the flow of water from the kidneys, thus paralleling exactly the action of uric acid, to which I of course attribute his results with alkalies.

With regard to the metabolism of albumens, on which Dr. Yavein apparently found that alkalies have but little effect, I have written a good deal, as indeed my whole explanation of the causation of Bright's disease hinges on the effects of urates on metabolism; and I would point out that if he is able to continue his researches in this direction he will probably find that the effect on metabolism is proportional rather to the amount of urate that an alkali meets with in the body than to the absolute dose of alkali. Thus if 300 gr. of carbonate of soda cause the excretion of 15 gr. of uric acid in one man and of 20 gr. in another the depression of metabolism will be more marked in the latter, though he only had the same dose of the drug.

As regards physiology and experiment we have now seen that in natural conditions the urinary water varies from hour to hour and from day to day inversely as the uric acid and that the excretion of water from the skin, lungs and the glands generally is influenced in the same way by the amount of uric acid in the blood. We have further seen that all drugs which clear uric acid out of the blood and diminish its excretion in the urine allow the arterioles to relax cause diuresis and a concomitant increase of the water excreted from all other glands and surfaces; while conversely all drugs which increase the urate in the blood and urine contract all the arterioles, rendering the urine scanty and diminishing the output of water from the glands and the surface of the skin and lungs. And, further, as I have shown that my law of solubilities[8] gives us power to increase or diminish at pleasure the amount of urate in the blood, we have it in our power to relax or contract the arterioles and thus can control to a very important extent the elimination of water from the body.

I shall now pass on to some clinical and pathological points and shall divide the conditions into (1) those in which there is an excessive excretion of urates with concomitant excess in the blood, and (2) those in which there is a diminished excretion. Under the first come migraine or the uric-acid headache in which there is, as I have shown, a *plus* excretion of urate corresponding to the attack, and with this *plus* excretion the urine is extremely scanty, as 30 to 40 cc. per hour; but when the attack passes or is driven off by the use of acids or other drugs which clear the urates out of the blood and urine, the water is profuse as 100 to 200 cc. in the same period of time—in other words, the water held back in the body during the period of uric acidæmia and contracted arterioles passes out at once as soon as they are relaxed. Precisely the same thing applies to attacks of epilepsy and hysteria; I have shown that the urate excretion is large and the water scanty during the attack and it is well known to be profuse as they pass off. The ordinary history of a case of gout illustrates very well the same point; between the attacks, as is well known the urate excretion is large, and if the water is saved from day to day it will be found to be scanty; but when an acute attack comes on it will be seen that with the first rise of temperature there comes a more or less profuse diuresis. I know of no condition in which there is such severe and prolonged uric acidæmia as in Bright's disease, and in acute cases the water is extremely scanty.[9]

In chronic cases it is also during the day rather scanty; but at night the blood is to some extent cleared of urate by the rising acidity, and then there is a profuse diuresis of urine of such low specific gravity that the urine of the whole twenty-four hours seems to be profuse and watery; but here, just as in physiological conditions, the water is to a large extent inversely as the uric acid.[10] It is also well known that the contracted arterioles of Bright's disease are completely relaxed by the onset of a febrile complication and a great diuresis may be the result of this;[11] before the fever the urine was 15 oz. to 16 oz. in twenty-four hours, with the fever it ran up to 80 oz. in the same period, and an extensive anasarca was quickly removed.

This brings me to Group 2, the cases in which there is a diminished excretion of urate, and in pathology this is generally due to causes which interfere with its solubility in the blood, and in nature, apart from drugs, this is generally due to a diminution of the alkalinity of the blood. Now it has been shown by Peiper and others, whom I have often quoted, that fever diminishes the alkalinity of the blood, and there is no doubt that it also increases the acidity of the urine. Therefore fever is the pathological condition in which there is least urate in the blood and urine, and it is well known that fever markedly relaxes the arterioles and the one effect is the result of the other. Now, if in any hospital patient the urine is being saved from day to day and the temperature has been for some time normal or subnormal, the onset of any fever will be seen to be accompanied by a more or less profuse diuresis, and this will continue so long as the fever continues to keep the blood free from urates on the one hand and so long on the other as there is any excess of water to be removed; hence though there is a diuresis in every case under these conditions, it is most marked in cases like the one mentioned above, where there is dropsy. To such an extent is this true that I would undertake to point out the days on which such a patient's temperature had risen, simply from the record of the water passed, provided no drugs affecting the problem had been given. To give an instance of this from recent clinical experiences I would refer to the so-called "diuretic action" of injections of fresh thyroid juice as used in cases of myxœdema. These injections cause a slight rise of temperature and relax the arterioles, and I have no doubt that the diuresis they produce, which is probably beneficial, is simply and solely due to the febrile movement, and might be brought about by the injection of any organic juice that produced a similar rise of temperature. Thus, I notice that my colleague, Dr. Davies, says in speaking of an interesting case of myxœdema which he showed at the Clinical Society, "The injections caused a gradual rise of temperature followed by diuresis."[12] I can show that a similar rise of temperature, however produced, would have the same effect; and as I have remarked in "Uric Acid," p. 118, the relaxed pulse which accompanies fever and the high tension and brady-cardia which follow it, are directly due to the effects of fever on the alkalinity of the blood and the solubility of the urates it contains.

I could quote many more pathological conditions which the same facts will serve to explain, and indeed I meet with them every day; but from considerations of space I shall now pass on to say a few words on the bearing of these facts on the pathology of dropsy, and some points in Dr. Dickinson's paper on the subject. He speaks of the absence of dropsy in obstructive suppression, but this is not very extraordinary, for in this condition, as I have pointed out, the skin, the lungs and the glands generally are still free to excrete water; in acute Bright's disease the vessels all over the body are contracted, and water cannot get out anywhere until they are relaxed. In such cases I have been able to relax the arterioles and produce diuresis and the removal of anasarca by applying my knowledge of the solubility of urates. I cannot act so powerfully as nature did in the case above quoted; but the diuresis is certainly proportional to the relaxation of arterioles I produce by using some of the drugs I have mentioned. Again, Dr. Dickinson goes on to say in his abstract,[13] "Passing to chronic conditions a contradiction presents itself, for dropsy lessens with a further increase of arterial tension." It does not seem to

[8] Uric Acid, p. 60.

[9] As to the causation of this severe uric acidæmia, see Uric Acid, p. 225.

[10] Ibid.

[11] See case quoted in Uric Acid p. 225.

[12] THE LANCET, vol. i. 1892, p. 976.

[13] Med.-Chir. Proceedings. April 26th, 1892, p. 112.

me that this fact implies any contradiction, for in the diagram from Dr. Lauder Brunton's paper, which I showed at the time of the debate and which can be found in his work on "Pharmacology and Therapeutics" (third edition, p. 430) it appears that with the rise of pressure the excretion of urine increases, until a point is reached, the pressure continuing to rise, at which the arteriole contraction apparently overcomes the power of the heart, and then the excretion of urine sinks down to little or nothing. Now this, I take it, is what occurs in acute Bright's disease, sudden severe uric acidæmia contracts the arterioles and overpowers the heart; hence with moderately high tension the urine is scanty. In chronic disease, however, the tension is higher and yet the urine is profuse, because the heart has meanwhile acquired power to force the blood through the kidney in spite of contracted arterioles; the contracted arterioles only stop the flow when they are able to overpower the heart. Thus the prognosis in Bright s disease with low tension is most serious, because the heart is for some reason unable to acquire power to force the blood through the arterioles; hence also when the heart fails at the end of chronic Bright's disease, dropsy at once supervenes; the arterioles are contracted all the time; but the effect of this contraction depends on the power of the heart to counteract it. Even in Bright's disease the water varies in accordance with the same laws that hold in physiology, being most in the night when the uric acidæmia is least and the arterioles are most relaxed, and least in the day when the uric acidæmia is greatest and the arterioles most contracted and the pulse also, in accordance with Marey's law, is slower in the day and quicker in the night period, varying with the relaxation or contraction of the arterioles. Thus in a case of chronic Bright's disease whose excretions I recently estimated the water was on one occasion forty-four ounces in the twelve hours ending 8 P.M. and thirty-four ounces on another, and in the corresponding twelve hours ending 8 A.M. it was seventy-four and seventy-two ounces respectively. The specific gravity of the day urine was high, 1020 and above, while the mixture of day and night urine was rarely above 1010. Here the excretion of water at night was nearly double that of the day and I hope my readers will now quite understand the cause of this. I would remark in reference to such a case that if one had seen the day urine only and apart from the trace of albumen which it frequently but not invariably contained one might have reasonably doubted whether it was a case of chronic Bright's disease at all and this, I think, is an important point to bear in mind—viz., that a good specific gravity during the day is no proof of the absence of chronic Bright's disease.

In conclusion I will merely restate my position that the elimination of water is dominated by the same law both in physiology and pathology and that the forces which in physiology cause a retention of water and an increase of body weight are the same forces that, acting more powerfully in pathology, cause dropsy and a greater increase of weight, and that the action of these forces can be demonstrated by the use of drugs, as is shown by my researches and those of Dr. Yavein which confirm them.

Brook-street, W.

CICATRICIAL STRICTURE OF PYLORIC END OF STOMACH:

FOLLOWING A BLOW ON THE EPIGASTRIUM; PYLOROPLASTY; CURE.

BY JAMES LIMONT, B.Sc., M.B.EDIN., M.R.C.P.LOND.,
AND
FREDERICK PAGE, M.D.EDIN., M.R.C.S.

History of the Case and Remarks by Dr. LIMONT.

D. H——, aged thirty-one, a stonemason, was admitted to the Royal Infirmary, Newcastle-on-Tyne, in November, 1891, complaining of indigestion of fourteen years' duration. Up to the age of seventeen the patient had no trouble with digestion. One day fourteen years ago he received a severe blow from the shaft of a heavily laden "bogie," which had broken loose on an incline. The end of the shaft struck him with great force in the region of the stomach, and pinned him against a large stone. He remained in bed four days vomiting frequently, even fluids at once bringing on an attack. After a time he returned to work, but for almost a year he vomited nearly every evening, and suffered from pain in the region of the stomach. During the next six months he was free from all trouble. Since that time, however, he has been subject to recurring attacks of vomiting, with more or less pain. At first the attacks would last from two to three weeks, and the intervals from two to three months. During the last two years, however, the attacks have been more frequent, lasting three or four days, with intervals of not more than four days. Before admission to hospital he had become unable to work through discomfort and weakness. His weight, which a few years ago was eight stones seven pounds, was reduced to six stones nine pounds. He stated that his appetite was good, especially in the mornings, but that half an hour after eating he felt greatly distended and had a heavy dragging pain in the abdomen. At irregular intervals he vomited very large quantities of a sour character, bringing up at the same time much wind. After vomiting he was markedly relieved and soon became very hungry. If he then took a meal he suffered little inconvenience, but the subsequent meals gave more and more discomfort. The bowels were very confined. The stomach could be seen to be markedly distended and the usual signs of dilatation were made out. In the left nipple line the stomach extended from the fifth space to the level of the umbilicus and could be made out to reach two inches to the right of the umbilicus. Towards its pyloric end could be felt a small hard body about the size of the distal phalanx of the little finger; it was not tender and moved freely with respiration. The case was diagnosed as fibrous stricture of the pylorus, probably of traumatic origin. For a month the case was treated by daily washing out the stomach by means of an irrigator. No appreciable improvement followed, and operative interference was suggested to the patient. He, however, left the hospital, but returned in February weaker and more emaciated than before, and was transferred to the surgical wards.

That this is an example of traumatic stricture one can scarcely doubt, when regard is had to the form of violence, the succession of symptoms and the condition found during operation. I have been unable to find a record of a similar case. Dr. S. Fenwick refers to dilatation following blows, but says it is generally due to displacement of the stomach produced by adhesions. The stricture here must have existed for many years, its injurious effects being, however, greatly lessened by compensatory hypertrophy of the walls. Even at the time of the operation the thickness of the wall was found to be greater than normal. It is interesting to find that a stomach dilated for so many years can regain its normal powers. Apparently neither the muscular fibres nor the mucous membrane has undergone appreciable permanent deterioration.

Operation and Remarks by Mr. PAGE.

On March 2nd, 1892, the patient's stomach having been washed out with a solution of boracic acid, the abdomen was opened by a median incision, extending from the ensiform cartilage to the umbilicus. On the anterior surface of the stomach, close to the pylorus, a puckering of the peritoneum was seen, about the size of a shilling. Beneath this puckering, and occupying an area of about twice its size, a hard mass could be felt in the substance of the stomach wall. Sponges were packed about the pylorus, so as to prevent blood and mucus escaping into the peritoneal cavity. The hard mass was then cut through with scissors and the incision carried into the stomach in one direction and into the duodenum in the other, beyond the limits of the induration. The mucous and peritoneal edges of the wound were then sewn together over the muscular coat with a continuous suture of fine silk. The left angle of the wound (ending in the stomach) was next secured to the right angle (ending in the duodenum) with a Lembert's suture of silk. This converted an incision which had been made almost at right angles to the long axis of the body into one nearly parallel to it. The wound was closed with a double row of Lembert's sutures and covered with a graft of omentum. The sponges were removed and the abdominal incision sutured with silkworm gut. The patient suffered very little inconvenience from the operation. He vomited a few hours after and has never been sick since. For eight days he was fed entirely by the rectum. On the ninth day fluids were taken by the mouth, and on the sixteenth he took fish and gradually returned to his ordinary diet. On March 31st (twenty-nine days after the operation) he weighed 7st. 8½ lb., having gained 1st. 3½lb. He is now (June 12th) quite well, weighs 10st., and has resumed his ordinary occupation.

Of the surgical procedures at our disposal for the treatment

of stricture of the pylorus of a non-malignant character pyloro-plasty—the ingenious operation suggested by Mikulicz and Heinke almost contemporaneously—seems to be by far the most satisfactory in its results. It has been practised pretty extensively on the Continent and in America, and attention was drawn to the operation by Keen of Chicago[1] last February. I am not aware, however, that any case has been hitherto recorded as having occurred in England.

Newcastle-on-Tyne.

SOME POINTS IN THE ETIOLOGY AND PATHOLOGY OF DIABETES MELLITUS.

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DURING the last four years seventy cases of diabetes mellitus have come under my observation at the Manchester Infirmary and elsewhere, some of which have presented points of interest respecting the etiology and pathology that seem worthy of being recorded.

DIABETES AND THE NERVOUS SYSTEM.

CASE 1. *Marked ataxia of sudden onset; paralysis of right internal rectus; tremor of right arm; onset of diabetes seven weeks after commencement of symptoms.*—J. W——, aged forty-eight, was admitted under the care of Dr. Steell to the Manchester Infirmary on May 7th, 1890. Patient was quite well until April 26th, 1890. On the morning of that day, when going to his work, he suddenly became ataxic and fell to the ground. No loss of consciousness, no paralysis of limbs. He has been unable to walk or stand since, owing to ataxia. History of alcoholism; no syphilitic history. On admission, patient is unable to stand alone; when well supported he is able to advance a few steps and throws forwards his right leg in a jerky, irregular manner. Marked ataxia; no paralysis of limbs; no rigidity; knee-jerks present; no ankle-clonus. Right palpebral fissure smaller than left; apparent ptosis of right eye; paralysis of right internal rectus; left pupil larger than the right. Slight nystagmus; slight tremor of the right arm when the limb is supported, but this is more marked on voluntary movement. Optic discs normal. Old perforation of right tympanic membrane. Temperature normal. Urine 1015, acid, no albumen, no sugar, quantity normal.—June 12th: Amount of urine increased to 92 oz.—15th: Urine pale, clear, 1024, acid, contains a large amount of sugar.—23rd: Great thirst, voracious appetite. During the first three weeks of the diabetic symptoms the amount of urine varied from 160 to 190 oz. and the sugar from 3200 to 4200 grains daily. The amounts of urine and sugar were both diminished by restricted diet. A few months later several large carbuncles developed on the gluteal region, but in course of time these and the paralysis of the right internal rectus, the ptosis and nystagmus disappeared. The diabetic symptoms, the tremor of the right hand and the ataxia persisted.

CASE 2. *Tumour of the pituitary body.*—A. H——, aged twenty-three, was admitted under the care of Dr. Ross to the Manchester Infirmary on Nov. 16th, 1890.[2] History of headache and gradual enlargement of hands and feet; symptoms of acromegaly. Temporal hemianopsia of the right field of vision; in the left field vision entirely lost, with the exception of a very small area near, but a little to the temporal side of, the centre of the field. Urine 1035; no albumen, no sugar; loaded with urates. After remaining in the hospital for several weeks the specific gravity of the urine rose to 1045, and it was found to contain sugar by Fehling's test, by the phenyl hydrazin test and also by fermentation. The amount of sugar at first was fourteen grains to the ounce; the amount of urine normal. The sugar gradually increased in amount. The patient left the hospital for several months and then returned on account of an abscess which had developed in the left breast. She was admitted on the surgical side under the care of Mr. Southam. The patient complained of thirst and on examination of the urine a large amount of sugar was found. The abscess was opened and treated antiseptically and the patient put on diabetic diet. The thirst, however, increased and five days later the patient died of diabetic coma. The temperature remained practically normal. At the post-mortem examination a round-celled sarcoma of the pituitary body was found, which pressed on the optic chiasma, and in which the left optic nerve was embedded. The rest of the brain was normal. The thyroid was a little enlarged and contained a colloid cyst. There were changes in the pancreas, which will be afterwards described. Liver enlarged; weight 5 lb. 2 oz.; signs of fatty degeneration.

The following is a good example of *diabetes following an injury to the head*:—

CASE 3.—M. A. R——, aged eighteen, was admitted under the care of Dr. Steell to the Manchester Infirmary. The patient was a strong, healthy, stout girl up to the time of an accident seven months before admission. On going downstairs she suddenly slipped and fell down thirteen steps, the top of her head coming violently in contact with a door at the bottom of the steps. She was stunned by the fall, but did not lose consciousness. A dish which she had in her hand at the time was broken in the fall and her face was cut by the broken porcelain just below the right eye. She received a deep cut on the flexor surface of the right forearm just below the elbow. She had great pain in the head for many hours after the fall and has frequently suffered from severe headache since. Two weeks after the accident she first noticed thirst, which was soon followed by wasting. On admission, the patient was emaciated; knee-jerks absent; urine acid, 1045, no albumen; large amount of sugar present (twenty-three grains to the ounce); marked brownish-red colouration with Fe_2Cl_6. During the time the patient was in the hospital the amount of urine at first varied from 80 to 90 ounces daily; later from 56 to 68 ounces daily, with increase of sugar to 33 grains per ounce.

The next case is one of diabetes following great mental anxiety, in which purulent *cerebro-spinal meningitis and multiple abscesses in the liver* were found post portem. It is difficult to say what was the relation of the cerebro-spinal meningitis and liver abscesses to the diabetes. Even supposing these changes were due to some complication, they are so rare as to be not unworthy of brief record. A similar case is published by Frerichs.

CASE 4.—J. R—— came under my care on Sept. 28th, 1890. History of an attack of vertigo and vomiting in February, 1890. Five weeks later he began to be troubled with thirst and polyuria. He had been unemployed for eleven months; had lost a large sum of money and been subject to great mental anxiety before onset of diabetes. He had obtained employment, however, at a bleaching works about one month before he first noticed diabetic symptoms. A brother died of diabetes. When first seen the patient was considerably wasted. He suffered from thirst and polyuria. Urine 1032, acid; large amount of sugar present (1 cc. of urine contained 0·0517 gramme of sugar); no albumen. Knee-jerks absent. Commencing cataract in each eye. Bowels regular. Heart, lungs, liver and spleen normal. Four months later he was admitted as an in-patient at the Manchester Infirmary under the care of Dr. Ross. During the time he was in the hospital (six weeks) the amount of sugar varied from 1500 to 4800 grains daily and the amount of urine from 90 to 130 oz. From his admission (Jan. 21st, 1891) until Feb. 24th the temperature was normal. At the latter date the evening temperature was 102° F.—Feb. 25th: Patient complained of pain in the epigastrium. Urine contained for the first time a trace of albumen, and also gave for the first time a dark reddish-brown colouration with Fe_2Cl_6. Bowels constipated. For the next three days the evening temperature was between 102° and 102·8°; then for four days the evening temperature was between 99° and 100°.—March 4th: Evening temperature 102°; pulse 96; respiration 25.—5th: Morning temperature 99·6°; evening 103·2°.—6th: Morning temperature 101·2°; evening 100·2°. Patient complained of pain in the right hypochondriac region. Edge of liver felt about one inch and a half below the ribs. No jaundice; no rigors. Patient became very restless and semi-conscious. Knee-jerks absent; calf muscles tender; no paralysis; no anæsthesia. He could be roused to answer questions until just shortly before his death at 2 A.M. on March 7th. Shortly before death the pulse was 224; respiration 72. No discharge from ears or symptoms of suppurative otitis media during the patient's illness.

Necropsy (abstract).—Peritoneum, pericardium, heart and aorta normal. Lungs, adhesions at right apex; small patch of broncho-pneumonia on left lower lobe and another at right apex. Left apex puckered; several small calcareous nodules and cicatrices. Kidneys normal; suprarenal capsules, medulla of each congested; two small yellowish nodules in medulla

[1] Medical Press and Circular.

[2] This patient's symptoms were the subject of a clinical lecture published by Dr. Ross in the International Clinics.

of right capsule. Spleen slightly enlarged and pulpy, weight eleven ounces. Pancreas (weight two ounces and a half) somewhat small and firm. Liver (weight five pounds), capsule normal; on section scattered irregularly throughout the right lobe, but most numerous in the outer half of the right lobe, are a number of small abscesses varying in size from a pea to a marble. Near the right border these are clustered together so as to form a large suppurating patch four inches transversely by two inches and a half vertically. The pus can be washed away, leaving small cavities. At only a few places is there any zone of hyperæmia around the abscesses. Gall-bladder contains a small amount of orange-coloured bile; mucous membrane slightly congested, but no ulceration can be detected. No obstruction of cystic, hepatic or common bile-ducts. Large bile-ducts can be traced in liver substance for a considerable distance, but nothing abnormal detected. No thrombus in portal vein or any of its larger branches. Stomach: no ulceration or other abnormality of importance. Rectum, prostate and bladder normal. Spinal cord; dura mater normal. On opening dura mater, meninges of posterior surface of cord, in dorsal region, very turbid and yellowish in colour; in cervical and lumbar region, turbidity not quite so well marked. Vessel of posterior aspect of cord much distended; only slightly distended in anterior aspect. Turbidity of meninges on anterior surface. On section of the cord nothing abnormal detected. Cord hardened in Müller's fluid. Sections in all parts normal to the naked eye (excepting meninges); microscopical examination confirmed the diagnosis of purulent lepto-meningitis. Skull cap, cerebral dura mater and blood sinuses normal; base of skull, including regions of petrous portions of temporal bones, normal. Meninges of each cerebral hemisphere turbid and yellowish; distinct suppuration at the sulci. At the anterior part of the first left frontal convolution is a hæmorrhage about the size of a halfpenny, irregular in shape, situated between the arachnoid and the cortex; and passing down between the convolutions, but not entering the brain substance. The meninges of the upper surface of the cerebellum present the same appearance of purulent meningitis as those of the cerebral cortex. The membranes of the base of the brain appear normal. A small amount of turbid fluid is present in the lateral ventricles and a small amount of pus in the posterior horn of the left lateral ventricle. In the fourth ventricle nothing abnormal detected. Apart from the changes just mentioned the rest of the brain—basal ganglia, cerebral hemispheres, cerebellum, pons and medulla—appear normal. Microscopical examination confirmed the naked-eye appearances of purulent lepto-meningitis. Sections of the pons and medulla showed slight dilatation of the vessels at the floor of the fourth ventricle, but no other microscopical changes.

In the history of some of the seventy cases of diabetes there were several other points of interest. Thus great mental anxiety and worry due to loss of money, loss of employment &c., were antecedents in nine cases. In one case the symptoms came on whilst the patient was preparing for the Final B.A. Examination Lond. For a long period he had devoted almost the whole of his time, with the exception of that required for sleep and meals, to the closest study. In one case the patient had been subject to epileptic fits for several years.

As regards heredity, in one instance three sisters all suffered from diabetes. In six other cases there was a family history of diabetes. In eight cases there was a long history of very great alcoholic excess up to the time of onset of diabetic symptoms. In two cases the symptoms came on during an attack of pleurisy. In another case diabetes came on during prolonged lactation; marked wasting soon occurred and the patient died about twelve months after the onset of symptoms. I have notes of another case, in which diabetes followed a mammary abscess soon after confinement. In one case symptoms of diabetes came on during influenza, in another case during a severe cold.

DIABETES AND LESIONS OF THE PANCREAS.

Changes in the pancreas are of great interest, since Minkowski and v. Mering showed by their famous experiments in 1889 that diabetes could be produced in dogs by total extirpation of the pancreas.[3] I have examined the pancreas in four cases of diabetes.

CASE 1. *Marked cirrhosis of the pancreas.*—T. L——, aged forty-five (under the care of Dr. Ross at the Manchester Royal Infirmary). Diabetes mellitus, with wasting. Peculiar pinkish tinge of the urine. History of great alcoholic excess. Death by coma. Necropsy: Pancreas weighed four ounces and a quarter; was very hard and was cut with difficulty. Section showed to the naked eye that the organ was infiltrated with dense fibrous tissue, in which small masses of the remaining gland tissue were embedded. There were several small cystic dilatations of the pancreatic duct, containing small calculi and mucous fluid. Microscopical examination showed a very great excess of fibrous tissue. In some places almost the whole of the field of the microscope was occupied with dense fibrous tissue. At some parts small clusters of pancreatic cells, at other parts small lobules of degenerated pancreatic tissue, were seen embedded in the fibrous tissue. With the exception of a cavity and other tubercular changes in the right lung examination of the liver, brain and other organs revealed nothing of importance.

CASE 2. *Atrophy and fatty degeneration of the pancreas.*—T. S—— (under the care of Dr. Mackenzie, Victoria Hospital, Burnley). Diabetes with wasting. Death by coma. Necropsy: Pancreas markedly atrophied, exceedingly soft and flabby, weight one ounce and a quarter; on section studded with pale spots. Microscopical examination of sections stained with osmic acid showed marked fatty changes, especially at the pale spots. At many parts the pancreatic cells contained small fat globules. Mingled with these degenerated cells were fat cells, some small, others very large. In some parts the fatty changes occupied the centre, at other parts the periphery of a lobule.

The pancreas in the case of A. H—— (tumour of the pituitary body), above described, was very large and heavy. It weighed six ounces. Microscopical examination showed a marked excess of interlobular fibrous tissue, which in some parts was richly supplied with nuclei. In this interlobular connective tissue many large clusters of fat cells were embedded, also in the interior of many of the lobules, groups of large fat cells were scattered. Whether the diabetes in this case was produced directly by the tumour of the pituitary body or indirectly through secondary pancreatic changes it is impossible to say.

In the case of J. R——, above described, the pancreas appeared normal microscopically.

[To Drs. Steell, Leech, Ross, Dreschfeld and Mackenzie, and to Mr. Southam I am indebted for kindly giving me the opportunity of observing some of the above cases.]

[3] For discussion of the relation of lesions of the pancreas to diabetes, and for complete notes of the cases of T. L—— and T. S——, see paper in Medical Chronicle, March, 1892.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

ON THE TREATMENT OF CLOTTED BLOOD IN THE BLADDER BY AN EVACUATOR.

BY H. A. LEDIARD, F.R.C.S. ENG.,
SURGEON TO THE CUMBERLAND INFIRMARY.

ON somewhat rare occasions the surgeon has to deal with troublesome hæmorrhage into the bladder, where the blood in place of mixing with the urine and passing out naturally becomes clotted, and where further bleeding goes on so as to cause a painful distension of the bladder. In such a case a catheter is passed without affording relief, for the eye of it is instantly plugged. Bleeding continues owing to the presence of clot much in the same way as post-partum hæmorrhage lasts, so long as a clot prevents contraction of the uterus. Among the causes of intra-vesical hæmorrhage villous tumour occupies the first place, for the bleeding is sometimes rapid and the clotting firm; other malignant growths bleed, but, perhaps, less severely. Hæmorrhage is associated with enlarged prostate and ruptures of the bladder, but in the latter most of the blood will be intra-peritoneal. Hæmorrhage after lithotomy is usually external, but according to Erichsen venous hæmorrhage after lithotomy is apt to find its way back to the bladder and may coagulate and distend that organ. Whatever the cause may be, the object held in view is to empty the bladder, and this is by no means easy, for clots will not pass through an ordinary catheter, even when a stream of water is now and then injected down the catheter to keep the eye clear; neither will clots pass

through a large catheter attached to an evacuating bag. So excellent a lithotrity evacuator as Morgan's has proved quite useless in my hands when the bladder has become distended with clotted blood. Some stronger suction power is needed than the recoil of an indiarubber bag, and all that is wanted is a brass ear syringe, some rubber tubing, and a large evacuating catheter of Bigelow's kind. In this way the bladder is rapidly cleared out; but in order to facilitate the operation I have adopted the ordinary stomach pump syringe, for with it the bladder can be emptied without disconnecting the rubber tubing at the end of each suction, in order to empty the syringe. With the double nozzle of the stomach syringe the apparatus will allow of the bladder being cleared and washed out at the same time without disconnecting the rubber tubing. As it may be convenient to have these instruments ready at hand for emergencies I have had a stomach pump syringe, some rubber tubing and a large-eyed, large-sized evacuating catheter put together in a case by Down Brothers, St. Thomas's-street, Borough, S.E.

Cumberland.

"NOTES FROM A PRACTITIONER'S CASE-BOOK."

By HUGHES REID DAVIES, M.R.C.S., L.R.C.P.LOND.

UNDER the above heading, in THE LANCET of July 2nd, Dr. Howard Murphy notes an interesting case of dislocated patella, and in concluding his record observes: "I have not been able to find any mention of such a dislocation of the patella (if it deserves such a title) in any of the text-books." A precisely similar case occurred in my own practice in June, 1891, and whilst I administered ether to the patient—a lady of about seventy years of age—Mr. Jonathan Hutchinson, jun., reduced the dislocation, the reduction producing a "loud snap," as in Dr. Murphy's case. Dr. Murphy's experience and mine are peculiarly similar. My patient, like his, had mounted a chair for the purpose of adjusting a window blind, the shifting of which caused the leg to twist in some unexplained manner and the rare dislocation to occur. The after history was equally favourable. I remember there was considerable doubt at the time as to how the lower border of the patella became so firmly fixed, but I do not recollect that any very satisfactory conclusion was arrived at.

The salicylate treatment of chorea.—I have had complete success in the salicylate treatment of the chorea of children, especially when accompanied by a mitral murmur; but of chorea in adults I have had no experience.

My round of general practice has been singularly rich in interesting "cases" during the last two or three years, a few of which I might briefly note perhaps without being deemed tedious.

Infantile intussusception.—Two of these cases I have been able to successfully reduce—under an anæsthetic—by perflation per rectum with an ordinary Higginson's syringe. To the first I was called in consultation by Dr. J. C. H. Dickinson, whilst the other occurred in my own practice, and both cases came under my notice within the space of a year.

Floating kidneys.—Of these I have had many, sometimes single and once double. One case became an in-patient at the London Hospital, under the care of Mr. Treves, with a view to fixation of the kidney. The interest in this case was further advanced by the fact that whilst under operation a fair sized renal calculus was discovered and removed. But of this case I am hardly justified in speaking, as doubtless Mr. Treves has it on record.

Foreign bodies removed.—1. A needle-case from a virginal vagina. 2. A large plug of coarse tobacco, encased in wax, from each ear of a commercial traveller—a Devonshire man. He was much troubled by tinnitus aurium and almost complete deafness, both of which symptoms were immediately relieved by removal of the foreign bodies. This patient informed me that he distinctly remembered some thirty years back being treated for earache by the west country method of plugging the ear with tobacco. Therefore, upon his own showing, the length of time during which the foreign bodies had remained in his meatus was thirty years. 3. Two saloon-pistol bullets, one from the thecal eminence, the other from the flexor surface of the first phalanx of the third finger. 4. A needle, after a year's residence, from the hand of an old lady of eighty-five. 5. The complete metallic portion of an etching-pen, at least two inches in length, which was situate for three weeks in a vertical position about one-sixteenth of an inch from the deep palmar arch. 6. Complete occlusion of right nasal passage by a foreign body for thirteen years,[1] &c.

In conclusion I may say that one can hardly call "general practice" *monotonous* with such a list.

Bow-road, E.

FRACTURE OF THE UPPER JAW WITH MALAR DEPRESSION.

By GEORGE WHEELER, M.C. CANTAB., F.R.C.S. ENG., &c.,
UNIVERSITY LECTURER IN SURGERY, CAMBRIDGE.

FRACTURE of the upper jaw with malar depression occurs so frequently at football, and is so easily overlooked, that I call attention again to the subject, and mention a case as an illustration. A fortnight ago an athletic undergraduate called upon me and stated that he could do no reading on account of headaches, which he considered to be the sequel of a football accident five weeks before. He stated that during a match he was knocked senseless by the charge of a player, whose head struck him full upon the prominence of the cheek. Vomiting followed after a short period of unconsciousness and then apparent recovery. On examination there was a yellow stain about the left lower ocular conjunctiva where it had been bloodshot; no other sign of ecchymosis was present. The left malar prominence was slightly depressed as compared with the other side, and an irregular chink could be felt along the orbital margin. There was a very evident line of fracture to be felt on placing the finger inside the cheek on the malar process of the superior maxilla. The patient had not been able to bite on that side since the accident, and there was a remarkable gap which prevented the first molar from touching the lower teeth on that side, a condition which was probably a mere coincidence. There was a patch of numbness in the cheek, but not that definite area of anæsthesia which is found after injury to the infra-orbital nerve. Neuralgia had lately kept him awake at night.

In cases which I have briefly recorded among others to illustrate the effects of blows upon the malar bone,[2] though there was fracture of the jaw with malar depression, yet not more shock and not more ecchymosis could be discovered than is usual in an ordinary black eye, but a slight deformity was permanent. Other cases were followed by serious results, as orbital abscess, paralysis of the infra-orbital nerve, or serious head symptoms suggestive of fractured base. An interesting case is recorded by Mr. Holmes of a gentleman who, after a fall, received a fatal brain injury. An orbital ecchymosis during life exactly resembled that which attends fracture of the base of the skull was found after death to be due to a fracture of the malar bone near its junction with the frontal. In every case which comes under observation after a blow upon the malar prominence an examination should be made of the orbital ridge, of the malar process of the upper jaw and the zygomatic arch on the injured side. The finger in the mouth passed up beneath the cheek will readily detect any fracture of the malar process. The injury above described should be considered of interest and importance like a head injury, and, however trifling it may appear, should not be looked upon lightly.

Cambridge.

EMPHYSEMATOUS VAGINITIS.

By H. E. WRIGHT, L.R.C.P.EDIN., M.R.C.S., J.P., &c.

DR. HERMAN, in THE LANCET of June 6th, 1891, describes a case of what he calls emphysematous vaginitis, and he remarks upon the rarity of this disease in England within the past few weeks. I have had a case in my practice here which seems to be closely allied to Dr. Herman's, especially to those cases which he quotes from German literature. Although I did not verify the presence of gas in the vesicles, it is quite possible it may have existed in some of them, as I did not pay particular attention to the point. The following are notes of the case:—

Mrs. ——, aged twenty-seven, had been under my care for endocervicitis and erosion of the os uteri for nearly three months. On Sept. 2nd she came to me to have the last applica-

[1] THE LANCET, Nov. 15th, 1890.
[2] Practitioner, Sept. 1891; Camb. Med. Soc. Proc., 1889.

tion of nitrate of silver made to the cervix, and on passing Ferguson's speculum I noticed the vagina was studded with white spots, some of the size of a hempseed, others that of a small pea. The spots were milky white and about a third of an inch apart. A close examination showed them to be vesicles, and in adjusting the speculum some of the vesicles were ruptured and a watery, opaque fluid exuded. The ruptured vesicles left small pits in the mucous membrane. The cervix was quite free from the vesicles, which were most abundant in the upper two-thirds of the vagina, the lower third and the vulva being unaffected. I had never seen such a condition of the vagina before and I have a large practice in diseases of women. The milk-white spots suggested the oidium albicans, but closer examination clearly showed the spots to be true vesicles. The patient and her husband were surprised when I informed them of the condition of the vagina, which apparently had given rise to no special symptoms. I applied the nitrate of silver as usual to the cervix and left the vagina alone. Three days after this the husband came to me and said that his wife complained of an irritating watery discharge from the vagina and some burning of the passage and itching of the vulva. I prescribed, without again seeing the patient, some borax and glycerine, to be used in warm water as an injection two or three times a day. I heard nothing more of my patient for about ten days, when her husband came to consult me about himself. He said, "I have got the same complaint which my wife has just had. It came on a few days after I had connexion with her, which was the day before she came to you." I had advised him not to have intercourse with his wife until the vagina should have regained its healthy condition. On examining the husband, I found the whole surface of the glans penis excoriated in small spots or patches; there were no vesicles, but the condition of the glans was very suggestive. I must mention that the irritation and soreness of the penis had existed for one week prior to this visit. There was slight redness of the orifice of the urethra and occasionally some slight burning in passing urine. There was no discharge, either water or pus. I prescribed a lead lotion and in a few days he was quite well. I regret that I did not examine some of the vesicles for the oidium albicans, as their milky whiteness and rapid disappearance after using a lotion of borax and glycerine convince me that I might have been successful in my search.

Greytown, Natal.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se compare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. THOMAS'S HOSPITAL.

CASES ILLUSTRATING THE TREATMENT OF RECURRENT PELVIC PERITONITIS BY ABDOMINAL SECTION; REMARKS.

(Under the care of Dr. CULLINGWORTH.)

WE continue and conclude this week the series of instructive cases of recurrent pelvic peritonitis commenced at page 20 of our last issue. We have already published four of the cases and as this week we give the remarks of the operator, advise our readers to refer to those cases before reading the remarks. As Dr. Cullingworth points out, it is impossible to prevent the occasional formation of a fæcal fistula after the separation of adhesions which are so firm as those found in the patients under his care and others of a similar character.

CASE 5.—J. L——, aged thirty-one, a primipara, by occupation a nurse, was admitted into Adelaide ward on March 3rd, 1892, suffering from pain in the abdomen and sickness. Previous history: In November, 1890, the patient strained herself in her efforts to put out a fire and for a week afterwards she complained of dragging pains in the lower part of the abdomen. At the end of this time, whilst out walking, she was suddenly seized with acute pain in the abdomen, went home in a cab, being unable to walk on account of the pain, and at once went to bed. Two days later, the period being then a fortnight overdue, she began to lose dark-coloured blood from the vagina copiously and suffered from vomiting, constipation and retention of urine. On Dec. 18th, 1890, she was admitted into the ward complaining of hæmorrhage and pain and with a distinct abdominal swelling. A diagnosis of intra-peritoneal hæmatocele and right hæmato-salpinx was made and an operation advised but declined. She left the hospital on Jan. 14th, 1891, still losing blood. The loss continued till April, when it ceased. A month later she menstruated normally and has remained regular since. In October she noticed a yellow vaginal discharge, and experienced pain in the back and left iliac region, which continued to trouble her for some months; her general health, however, did not suffer, and she remained at her duties as an infirmary nurse till February of the present year. In the first week of February last (her period being due) she experienced a sudden sharp attack of abdominal pain and tenderness, accompanied by vomiting. Her period came on the same day, the flow being much more profuse than usual. She remained in bed for eight days and then got up and resumed her duties; her period had ceased, but the pain in the abdomen continued and was aggravated by any unusual exertion. Three weeks after the commencement of the above attack there was a sudden exacerbation of pain, with vomiting and hæmorrhage. She remained in bed for a week and says her temperature reached 104° F. on one occasion. At the end of the week she was readmitted. On examination the abdomen was rigid and there was considerable tenderness over the lower part and especially in the left iliac region. Per vaginam, the right fornix was normal in height; the left was depressed by a firm, irregular, tender mass, the size of a duck's egg, occupying the left posterior quarter of the pelvis and displacing the uterus slightly forwards and to the right. The uterus was movable and slightly enlarged, its canal measuring three inches. Similar but smaller masses were felt behind and on the right. No evidence of any separation could be detected between them. The urine was normal and the temperature 101·4°. Three weeks later—viz., on March 24th—the patient had not improved and the physical signs remained unaltered. The abdomen was opened and the pelvic viscera were found obscured from view by adherent omentum and intestine. After these had been separated the left Fallopian tube and ovary were found to be enlarged, inflamed and densely adherent. During the process of separation, which was tedious and difficult, the diseased ovary was ruptured and its purulent contents (about two fluid ounces) escaped. There was a small non-suppurating cyst of the right ovary. The right tube was adherent, but not diseased. After removal the collapsed ovary measured two inches by an inch and three-quarters and its wall was acutely inflamed. The abdomen was thoroughly douched and drained for forty-eight hours. Convalescence was complete and unmarred by complications. The patient was discharged on April 18th, feeling quite well, the abdominal wound having been completely healed for over a fortnight. She reported herself a month later, and was then in good health.

CASE 6.—A. C——, aged thirty-nine, married, was admitted into Adelaide ward on March 29th, 1892, complaining of abdominal pain and uterine hæmorrhage of three weeks' duration. Previous history: She began to menstruate at the age of eleven and has always been regular, the flow being somewhat profuse and lasting from five to six days. She married in 1881, when twenty-seven years of age, and has had one child, born the following year. She married a second time at Easter, 1887, having been a widow a little over twelve months, and has not been pregnant since. She enjoyed good health till Easter, 1891, when she was confined to bed for a fortnight with pain in the lower part of the abdomen. She quickly recovered from this attack and remained well till three weeks ago, when she again suffered from pain in the lower part of the abdomen and left iliac region. The last menstrual period had ceased fourteen days previously. On the following day she had a flooding with aggravation of the pain and the bleeding continued, gradually diminishing till March 24th, when it ceased. The pain, however, continued to be severe and compelled her to keep her bed. During the last three weeks she has also complained of loss of appetite, diarrhœa and vomiting. On admission she was a well-nourished woman, complaining of constant pain in the lower part of the abdomen and of flooding, which had recently stopped. The abdomen presented nothing abnormal on examination, except some slight tenderness and resistance in the left iliac region. Per vaginam both lateral fornices were found depressed, the right more than the left. Uterus

normal in position, but slightly enlarged. The sound passed two inches and three-quarters. In the right posterior quarter of the pelvis a firm irregular mass could be felt about the size of a hen's egg. On the left side there was considerable resistance, but no definite tumour. The thoracic organs were normal. Temperature 98·6°. The urine contained a decided trace of albumen.

On April 7th the abdomen was opened. The omentum was firmly adherent to the anterior abdominal wall and to the back of the uterus; there were also adhesions between the uterus and intestine which were troublesome on account of their density and vascularity. After these had been separated the right Fallopian tube was discovered dilated and flaccid, and when traced backwards and downwards it was found to be continuous with the enlarged ovary, which was lying deeply in Douglas's pouch, embedded in adhesions. With great difficulty these parts were freed, brought to the surface and removed; about three fluid ounces of blood-stained non-offensive pus escaped from the ovary during the manipulations. The adhesions were very vascular and bled freely when broken down. The left appendages were adherent but otherwise normal and were not interfered with. The peritoneal cavity was douched with hot boracic lotion and the bleeding checked. A glass drainage-tube was introduced and the wound sutured with silkworm-gut sutures. The portion of the tube removed was irregularly enlarged and contorted, four inches and a half in length, the fimbriated portion was completely occluded by its adhesion to the diseased ovary, but there was no communication between the two. The mucous membrane of the tube was swollen and acutely inflamed and covered with thick, yellow, inoffensive pus. The ovary measured two inches and a half by two inches and contained several distinct loculi lined by an inflamed membrane and full of pus. Convalescence was somewhat impeded by a fæcal fistula which made its appearance on the morning of the fourth day after a severe attack of vomiting the previous night. Fæcal matter and occasionally flatus continued to escape from the wound in gradually diminishing quantity for a month, when the escape ceased and the wound healed. She was discharged on May 26th feeling quite well. On June 3rd the patient presented herself on account of the sinus having reopened. There was a free discharge of inoffensive pus, the patient's health otherwise was excellent.

Remarks by Dr. CULLINGWORTH.—Recurrent pelvic peritonitis in the female is, in the immense majority of cases, an indication of the presence of pus either in the Fallopian tube or in the ovary, or in both. It therefore almost invariably calls for surgical treatment, for the anatomical position of the tube is such that pus once poured out cannot drain away as it can from most of, if not all, the other mucous surfaces of the body, whilst in the case of the ovary the imprisonment of the pus is, if possible, even more absolute. The six cases forming the above series happened all to be in the ward at the same time. They were all admitted for acute pelvic inflammation and at least four of the patients were extremely ill. The history showed that in all but one of the cases there had been previous attacks, proving the presence of some chronic source of irritation. No one who saw the cases or who reads the foregoing abstracts, carefully prepared by my house physician, Mr. Banks, can doubt that operative interference was the best method of dealing with the cases and in some of them was probably the only possible means of saving life.

How do the contents of an ovarian cyst become infected? What determines their suppuration? There seems good reason for believing that the most common channel of infection is the Fallopian tube. Given cystic disease of the ovary and suppurative inflammation of the Fallopian tube (whether septic or gonorrhœal), there is strong evidence in favour of the view that the process of suppuration may be set up in the contents of the ovarian cyst by the passage of infective micro-organisms from the diseased tube. Case 1 is a good example of this method of infection in a case of gonorrhœal salpingitis. But this is not the only source of infection. For instance, in Case 2 it is more than probable that the suppurative process in the ovaries was due to contamination from the vermiform appendix, which was found in a condition of the most acute inflammation and so adherent to the wall of one of the cysts as to be apparently embedded in it. It will be noticed that in two of the cases fæces made their appearance in the discharges from the abdominal wound during convalescence: in one case on a single occasion only, in the other (Case 6) during thirty successive days. The liability for temporary fæcal fistulæ to occur after abdominal operations where the intestines have been seriously involved in the adhesions is well known. It is due to the ease with which the intestine gives way when its wall is rendered soft and friable by inflammation and its external support is lost by the removal of parts to which it has been adherent. Under such circumstances the strain produced by a fit of laughter or of coughing or the act of vomiting is quite enough to burst the bowel and permit the escape of flatus and fæces. Fortunately it is an exceedingly rare event for a fistula so formed not to heal spontaneously. It must not be supposed that the fact of there having been an escape of fæces in two out of the six cases is any real indication of the proportion of cases in which this accident ordinarily occurs, for these six cases were all of more than average difficulty and severity and the intestines in most of them participated to a more than usually serious extent in the general pelvic inflammation. One important lesson brought home to us by these histories is the wonderful tolerance of the peritoneum. The peritoneum may be soiled by the spilling of fetid pus and even by the passage of fæces over it for many days together without injury, provided ample means of exit exist by which the offensive material can be quickly got rid of by the intra-abdominal pressure. In every one of the six cases purulent material escaped more or less freely into the peritoneal cavity, owing to rupture of the thinner and more densely adherent portions of the cyst wall during the process of separation, and in no instance did any constitutional harm result. Again, in Case 6 fæces passed over the peritoneal surface for thirty successive days without any perceptible ill effects. It may be said, in reference to the bursting of the cysts, that it was the subsequent irrigation that prevented injury. I am a profound believer in the value of flushing of the peritoneum, but I cannot think that it is effectual to the extent of washing the surface absolutely clean. It is, in my opinion, sound practice to ensure free subsequent drainage for at least some hours whenever pus has escaped, so that any portion that may remain after the flushing and sponging may find an easy way out. The powerful force of intra-abdominal pressure is then usually quite equal to the task of effecting its expulsion. For the same reason free drainage should always be provided when there is the least ground for fearing the escape of the intestinal contents. If they are thus provided with a means of exit they will avail themselves of it without delay and the danger of peritonitis will be avoided. Another lesson taught by these and similar cases is that the method that was here adopted of removing the cysts entirely is infinitely to be preferred to that of merely emptying and draining the abscess cavity and then stitching the cyst wall to the edges of the abdominal incision. The presence of the most formidable adhesions ought not to deter the operator from attempting the more complete operation.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.

TWO INSTRUCTIVE RENAL CASES.

(Under the care of Dr. CLAY, Mr. WHIPPLE and Dr. PRANCE.)

BOTH these cases are important, as the real cause of the patient's serious condition was in Case 1 not diagnosed until the disease was very advanced; in Case 2 the kidney was never considered to be the primary cause of the patient's serious condition. In Case 1 death occurred whilst the patient was still under the influence of the anæsthetic, which was A.C.E. mixture; chloroform had been given at first, but when the patient was anæsthetised A.C.E. mixture was administered instead. The patient became convulsed and cyanosed and pulseless in a few seconds. She had never had fits during her childhood or pregnancy. The left kidney presented the appearance of a pyonephrosis due to calculus, the renal structure had entirely disappeared and the walls of the abscess cavities were quite smooth. The ureter was very thick, but its lumen was small. The pelvis was very much altered and filled up with fibrous tissue. In Case 2 there was nothing during the latter part of the patient's life to lead one to suspect kidney trouble. No tumour could be felt in the loin and nothing was found in the urine. Post-mortem examination showed how it was his condition was overlooked. The ureter was blocked; the abscess cavity had emptied itself, partly into the colon, and partly had made its way into the base of the right lung, where acute miliary tuberculosis had been set up. In both of these

cases there was well-marked compensatory hypertrophy of the other kidney, showing that if the diseased kidney had been removed there would still have been enough renal tissue left to be compatible with life. For the account of these cases we are indebted to Mr. A. Stanley Thomas, house surgeon.

CASE 1 (under the care of Dr. Clay and Mr. Whipple).—F. W——, aged twenty-nine, married, was admitted on April 12th, 1892, with the following history. Two months previously she had been delivered at full term of a stillborn child. She had enjoyed good health throughout her pregnancy, except during the last two weeks, when she suffered from pains in her legs. She got over her confinement very well and was up and about on the fourteenth day. After that she began to suffer from pain in the left side, which was thought to be due to pleurisy, but not until a month later did she notice anything amiss, when she found that the left loin was very swollen. The urine was examined, and was said to contain pus.

On admission she was extremely thin and pale and looked very ill. Temperature 101°F.; pulse 130. She complained of pain in the left hypochondriac region, which was markedly swollen and extremely tender. Dulness extended in the left flank from the seventh rib in the mid-axillary line downwards to the crest of the ilium; behind, it extended from the vertebral column forwards to within three fingers' breadth of the umbilicus. The swelling was very tense and no fluctuation could be obtained. Urine was acid; sp. gr. 1014; it contained abundant phosphates, no albumen or pus, and nothing was found by microscopic examination. No increase in frequency of micturition.

On April 13th her condition was much the same; temperature 100·4°. She had passed twenty-four ounces of urine in the previous twenty-four hours. It was acid; sp. gr. 1014; no pus. On April 14th, her temperature having been between 100° and 102° since admission and her condition having in no way improved, she was recommended to have the swelling in the left loin explored. That afternoon she was given chloroform; when fully under the influence of this anæsthetic A.C.E. mixture was given throughout the rest of the operation. An incision parallel to the last rib was made in the left loin and very offensive pus was evacuated. A second abscess cavity was then opened above the first and similar pus escaped. Both cavities were irrigated with boracic-acid solution and a large drainage-tube was put into both cavities and the wound was then dressed with carbolic-oiled gauze and wood-wool wadding. The administration of A.C.E. mixture had been stopped for quite a minute when the patient, who had been breathing well all through the operation, became quite suddenly convulsed and cyanosed, the pupils became dilated and the radial pulse, which had previously been good, suddenly ceased and the patient never regained consciousness in spite of every restorative means being applied.

At the post-mortem examination, which was unfortunately not a complete one, the capsule of the left kidney extended from the brim of the pelvis upwards to the seventh rib. In front the colon and small intestines were adherent. The kidney substance was replaced by abscess cavities, the walls of the cavities being smooth, the contents thick fetid pus. The pelvis of the kidney and the perinephritic tissue were extremely thick and the opening into the ureter was very small, but the lumen was not at all dilated. The sac and the remnants of the kidney weighed one pound two ounces. The right kidney weighed eight ounces and was quite a healthy hypertrophied organ.

CASE 2 (under the care of Dr. Prance).—R. E——, aged thirty, a labourer, was admitted on March 9th, 1892, with the following history. About a year ago he began to suffer from pain in the back and in the legs; he got gradually weaker, but not until early in February of this year did he take to his bed. On March 2nd he had his chest aspirated and a small quantity of pus was withdrawn from the right side. He had no history of any urinary trouble, and there was no history of phthisis in his family.

On admission he was very emaciated and complained of pain in the right side of the chest. He had a very troublesome cough; his expectoration was very offensive, but rather scanty. There was dulness over the right base and diminished vocal fremitus. On auscultation, fine rales and bronchial breathing were heard over this area. Respiration 22; temperature 98·8°. On palpating the abdomen nothing could be felt; patient complained of pain in the back; urine high coloured; sp. gr. 1014, acid; albumen present; no pus or blood. Microscopic examination revealed nothing. There was a superficial abscess over costal cartilages on the right side.

On March 10th the abscess was opened below the twelfth costal cartilage. It contained gas and most offensive pus. Its cavity ran upwards between the liver and diaphragm. It was washed out and a drainage-tube put in, and then dressed with carbolic oiled gauze and wood-wool wadding.

March 11th.—Had a better night. Has lost all pain in right side. Dressed. Breathes through the opening beneath the twelfth rib. The patient's condition was now thought to be due to an empyema, which had perforated the lung and diaphragm.

12th.—Not so well. Will not take any nourishment.

14th.—Bowels were opened three times. Motions very offensive and liquids resembling pus.

15th.—Patient became comatose and died early this morning.

At the post-mortem examination the incision made beneath the twelfth rib communicated with a perinephritic abscess. This abscess had extended upwards between the diaphragm and liver, the former had been perforated and the surrounding lung tissue was consolidated and affected with miliary tubercle. The rest of the right lung was normal, except that there were a few small calcareous nodules at the apex. The left lung also had signs of old tubercle at the apex. The abscess sac was adherent in front to the colon and had ulcerated into it in one place; the colon contained pus similar to that found in abscess. The right kidney weighed 10½ oz. and on section it was found to be riddled with abscesses, the walls of which were rough and irregular; and the contents varied from caseous material to thick yellow pus. The upper part of the ureter was dilated; five inches from the bladder it was kinked or twisted and at this spot the lumen was completely blocked. The left kidney weighed 12 oz. and was composed of quite healthy kidney tissue. There was no other sign of tuberculous disease.

Reviews and Notices of Books.

A Text-book of the Practice of Medicine for the Use of Students and Practitioners. By R. C. M. PAGE, M.D., Professor of General Medicine and Diseases of the Chest in the New York Polyclinic; Visiting Physician to Randall's Island Hospital, St. Elizabeth Hospital, the Polyclinic Hospital, and the North-Western Dispensary Department of Diseases of the Heart and Lungs; Member of the New York Academy of Medicine and the New York Pathological Society, &c. New York: William Wood and Co. 1892.

WE do not think that we can do better than quote the substance of some remarks from the author's preface to this work in order to describe its nature, design and general scope. He says that the chief objects in preparing the volume have been to facilitate clinical instruction and enable both the physician and student to obtain in brief the most practical as well as scientific view of the various subjects treated in it. Students in medical colleges and those who visit New York and other medical centres for the purpose of taking a supplementary course in clinical medicine, as well as the busy practitioner, often find that they have not sufficient time at their command to sift out desired information on any given subject from extensive treatises and systems. While such books are necessary and invaluable, it is believed that a shorter work is called for and will prove a valuable aid. Only the chief points in pathological anatomy, for instance, are given, and if further study in this direction is necessary recourse must be had to works specially devoted to the consideration of such subjects. On the other hand, the author has gone more fully than usual into detail regarding treatment, not only naming the drugs found useful but in many instances giving the prescription and dose. It is unquestionable that such books have their use, and the busy practitioner must frequently apply to a practical and compact work in which he can obtain the information he needs in a concise and condensed form, together with such methods of treatment as have been practically tested and

approved. It would be obviously unfair therefore to compare this work, as regards completeness and variety of information, with such treatises as the Dictionary of Practical Medicine by Various Writers, edited by Dr. J. Kingston Fowler, for example; but Dr. Page has succeeded on the whole in his Text-book of the Practice of Medicine in attaining the objects he has set forth in his preface. The book is illustrated, divided into eight chapters, and supplied with a table of contents, and a fairly sufficient, though short, index. The first chapter deals with Diseases of the Heart and Blood-vessels, and the information seems to be well put together and clearly set forth in the sixty-eight pages devoted to this subject. The chapter on Diseases of the Respiratory Organs is full. We notice that the author does not regard croup and diphtheria as one and the same, but as utterly different and distinct diseases. The symptoms of the former are those of catarrhal laryngitis, until stenosis takes place, when they are the same as those of diphtheritic croup. The one disease is a croupous inflammation of the mucous membrane of the larynx prevailing in certain damp, low-lying places exposed to north-east winds, and never infectious or contagious and not usually attended with the more severe constitutional symptoms and swelling of the lymphatic glands accompanying diphtheria. The author's description of and remarks upon pulmonary emphysema are to the point. We are glad to observe that he devotes attention to fibroid phthisis as a separate form or variety of chronic phthisis, but there is reason in Sir A. Clark's objection to its being regarded as invariably tuberculous (bacillary) in nature. The remarks on pleurisy with effusion and empyema are practical and sound. Diseases of the liver are fairly well described, but the description of suppurative disease of that organ is very meagre. In his chapter on Acute Infectious Diseases the author treats in a condensed and practical way of typhoid fever, and has some judicious remarks on the futility of giving large doses of quinine as an antipyretic. He alludes to the failure of large doses of ipecacuanha as a remedy in acute dysentery as the result of their experience of it in Bellevue Hospital in 1868; but we are glad to notice that he adverts to the use of aperients in the early stages of the disease, in which, by the way, he appears to have an earlier recourse to opium and to have greater faith in an opium treatment than the experience of others would indicate. The part devoted to Diseases of the Nervous System is not so full, scientific, and precise as could be desired.

As our readers will have already gathered from our remarks, we regard Dr. Page's book as a good digest of the practice of medicine. It is written in an easy, natural style and the author's aim has evidently been to aid the practitioner in recognising and treating the various diseases he may be expected to encounter in the practice of medicine as it exists to-day.

Microscopical Observations on the Hæmatozoon of Malaria, with an Appendix containing a Series of Plates of Illustrations and Descriptions. By Surgeon PATRICK HEHIR, M.D., F.R.C.S.Ed., Lecturer on Pathology and Clinical Medicine to His Highness the Nizam's Medical School and at the Afsul Gunj Hospital, Hyderabad.

IN this monograph the author endeavours to do for malaria in India what has been done for it in other countries. After describing the methods and instruments employed and mentioning that 3281 slide preparations of malarial blood were examined (of which 1490 were from fifty cases systematically and daily examined from the date of entrance into hospital to the date of discharge, cured), Dr. Hehir goes on to describe the various parasitic forms met with; of these he mentions spores, small amœboid organisms, spherical bodies, hæmatomonas malariæ stellata, intra-corpuscular bodies, crescents, hyaline bodies, spores, rosettes and amœboid bodies, flagellated organisms and various pigmented and phagocytic cells. He then gives a description of these various forms and an account of their development. The author agrees with Dr. Vandyke Carter that visible blood contamination may be more constant and uniform than concurrent pyrexial phenomena, and from this he argues that such contamination is fundamental, whilst the fever is rather a contingent event. He considers that the hæmatozoa of malaria have a local destructive influence on the red blood cells, but that they set up fever "by the action of some poisonous substance, possibly a ptomaine, acting as a stimulant upon the heat-generating centres." He also maintains that there is no excessive formation of leucocytes and that the pallor of the blood when drawn is due to a decrease in the hæmoglobin present in the red corpuscles. Quinine does not effect the immediate dissolution of the organism, although it frequently arrests the recurrence of the fever, "showing that the action of the quinine is not altogether direct on the parasite, or at least not directly lethal." The plates, though rough and in one case somewhat eccentric, indicate fairly well the author's ideas of the appearances presented by these organisms.

Les Anomalies Musculaires considérées au point de vue de la Ligature des Artères. Par L. TESTUT, Professeur d'Anatomie à la Faculté de Médecine de Lyon. Paris: Octave Doin. 1892.

THE arterial anomalies which are of importance to the surgeon have been fully described in such works as those of Quain, Tiedemann and Henle, and it is most exceptional that any undescribed deviation is now observed which can in any way affect the procedure of the surgeon who has had a fair experience in the dissecting-room and who is at all familiar with anatomical literature. In these works and in scattered papers and monographs by other anatomists some other anatomical peculiarities which have a direct bearing on surgical practice are pointed out, and the frequency of their occurrence often noticed, but muscular irregularities have been more especially studied from the standpoint of the morphologist or the comparative anatomist than from their relations to practical surgery, although this has not been altogether neglected. Professor Testut has therefore done a great service to the practical surgeon who may at any time have to ligature an artery in its continuity by pointing out in a serial order these various anomalies in so far as they affect the ligature of the different arteries and thus filling up, as he truly says, a serious omission in our text-books on operative surgery. The large arteries which he has found to be occasionally covered by supernumerary muscular bands of surgical importance are the brachial, the axillary, the subclavian, the internal mammary, the popliteal, the posterior tibial and the peroneal. As an example of the method in which the author deals with the subject we may refer to the ligature of the subclavian at the base of the posterior triangle. He points out that after cutting through the skin, platysma myoides, superficial and deep cervical fascia, the operator may come upon numerous muscular bundles running in different directions which are not mentioned in ordinary works on practical surgery or most of the students' text-books on general anatomy. These bundles may be due to a forward extension of the trapezius on the clavicle, to a clavicular attachment of the omo-hyoid or to the existence of a cleido-occipital, a levator claviculæ, a supra-clavicularis or to supernumerary fibres of the sterno-hyoid. Each of these varieties is discussed in detail and the same plan is followed in the case of the other arteries. The author has met with no muscular anomalies which would affect the ligature of the carotids, the radial or ulnar, the iliacs, or the femoral or the anterior tibial, and has therefore left them out of consideration. The small quarto of forty pages, published at 8 francs, is illustrated with twelve plates showing forty-one

varieties. These are excellently drawn in chromo-lithography and are mostly taken from Professor Testut's own dissections; they will well repay the scientific surgeon who devotes a little time to their study so as to supplement that everyday anatomical knowledge which is usually considered to suffice.

A Practical Treatise on the Diseases of Women. By T. GAILLARD THOMAS, M.D., LL.D. Sixth Edition, Enlarged and thoroughly Revised by PAUL F. MUNDÉ. London: J. & A. Churchill.

DR. MUNDÉ has performed a by no means easy duty fairly well, having recognised the difficult nature of bringing out a sixth edition of the "Practical Treatise" of Dr. Thomas, who, however, granted to the reviser the power to change, omit or add to the original text. This book has long been regarded, especially in America, as one of the most important text-books of the diseases of women on account of its clearness and apparent simplicity. In this edition we have a work combining the experiences of both these distinguished gynæcologists, for all the chapters have been largely altered, many of them entirely rewritten, and several new chapters have been added. Great advances have been made since the last appearance of this work in 1881, and we naturally expected to find in this edition more in the way of recording facts than in retaining many of the speculations which encumbered previous editions and in this we have not been disappointed. We think, however, that in some chapters too much of the old matter has been retained; for instance, we find five pages occupied with the subject of the employment of tents, to which is added a short note by Dr. Mundé indicating that Dr. Thomas's present opinion is that "tents of all kinds should be discarded in gynæcology, absolutely and completely" and rapid dilatation should always be practised by preference. Dr. Mundé, however, would be sorry to part with the tupelo tent where slow dilatation is required. In the preface it is stated that the work is designed for students and general practitioners, but owing to the differences of opinion sometimes expressed, as on page 491, in describing the treatment of pelvic peritonitis it must be rather difficult for a student to discover the principles underlying the prescribed treatment, seeing that the interpolated notes signed by Dr. Thomas and others more or less contradict the statements bearing the initials of Dr. Mundé. It is upon the whole an excellent treatise, but we consider that in many parts it is too verbose, and that if Dr. Mundé had acted on the authority given him by the author and omitted certain passages it would have been a more acceptable book both to students and to busy practitioners. The work is well got up and the illustrations, numbering 347, are beautifully executed.

Darwin, and After Darwin. An Exposition of the Darwinian Theory and a Discussion of Post-Darwinian Questions. By GEORGE JOHN ROMANES, M.A., LL.D., F.R.S. 1. The Darwinian Theory. London: Longmans, Green and Co. 1892.

THE present treatise, the author tells us, has grown from two courses of lectures delivered at the University of Edinburgh and at the Royal Institution. These two courses resembled each other in comprising between thirty and forty lectures, but differed largely in other respects; and seeing that the present treatise has grown much beyond the bulk of the original lectures, it has been deemed desirable to publish the whole in the form of three separate works. The first, dealing with the purely historical side of biological science, stands over for an indefinite time; the second is the one now brought out and is devoted to the general theory of organic evolution as this was left by the stupendous labours of Darwin; and the third portion will follow (probably in the autumn season) under the sub-title "Post-Darwinian Questions." It scarcely needs saying that the work, when completed, promises to afford the most comprehensive survey of the whole subject up to the latest date, from the hands of one of the ablest, most logical and most original of the exponents of the doctrines of Darwinism. This second part dealing with the Darwinian theory consists of 460 pages and is profusely illustrated. That which is to follow on Post-Darwinian Questions will probably demand extended notice, but we do not think that this part calls for any long criticism from us. All acquainted with the author's name and labours will be prepared to find that the facts connected with organic evolution are well arranged and lucidly stated, so as to evolve and lead up naturally and not arbitrarily to the line of reasoning and conclusions he has to set forth. Mr. Romanes says that as the present volume is simply intended to be a systematic exposition of what may be termed the Darwinism of Darwin and is likely to be of more service to general readers than professed naturalists, he has been careful to avoid assuming even the most elementary knowledge of natural science on the part of those to whom the exposition is addressed. Although this may be quite true, and the style adopted is as simple, precise and clear as practicable, and technical expressions have been for the most part avoided, still it has not been possible to do so altogether. The book requires much clear-headed intelligence and continuity of attention on the part of the general reader, who must be possessed of a good deal of elementary knowledge, scientific aptitude and "a love of the thing," if he is thoroughly to appreciate all the facts and the cogency of the reasoning—in the chapter on embryology, for example.

The introductory chapter contains some brief but excellent allusions to the subjective and inductive methods of research, to the revolt since the sixteenth century against the former and the disproportionate value assigned to Bacon's share in the movement, and to what the author terms the bugbear of speculation, which led to the idea that science ought to consist in a mere observation of facts or tabulation of phenomena without any attempt at theorising upon their philosophical import. The minds of naturalists were more or less bound and tied by the chain of these traditional notions, touching the severance between the facts of natural history and the philosophy of it, until the publication of the "Origin of Species" in 1859 set them free. It was in this, as in so many other respects, that it was an epoch-making book. Darwin was the Newton among naturalists, and in his eyes the value of facts was due to their power of guiding the mind to the discovery of principles. He was eminently painstaking and candid, with a sagacity in observation, a penetration in the interpretation of facts and phenomena that amounted to genius. Not facts or phenomena, but causes and principles are the ultimate object of scientific quest. To his predecessors the discovery or accumulation of facts was an end, to him it was a means; and the importance of Darwin's method of scientific speculation and of his exposition of the evidences of organic evolution as a fact and of natural selection as a cause were not circumscribed within the limits of a study of natural history. They had other and far-reaching influences. The late John Stuart Mill, for example, was not a naturalist, but a philosopher, and yet, indirectly, what a difference there would probably have been in his speculative methods of treatment of many subjects if he had lived and commenced to write after, instead of before, Darwin's doctrines had been propounded and investigated as they have now been.

Mr. Romanes shrewdly points out that some naturalists of the present day who have grown up in a Darwinian environment have more or less thoughtlessly adopted some form of Darwinian creed of a dogmatic kind, which, while it usually incorporates the main elements of Darwin's teaching, still more usually comprises serious perversions of their consequences. Be this as it may, Darwinism is only

concerned with the origin of particular forms of life—the origin of species. The theory of descent starts from life as a *datum* already granted, about the origin of which science is not at present, and possibly never will be, in a position to furnish so much as a suggestion. It deals with the evidences of evolution and the scientific theory of natural descent—continuity in natural causation.

The second and third chapters deal with Classification and Morphology and are clearly written and well illustrated. Chapter IV. on Embryology we have already alluded to. Chapter V.—Palæontology—is very well done and interesting, and is naturally followed by one on Geographical Distribution. The two serve to illustrate the general law laid down by Mr. Wallace that "every species has come into existence coincident both in space and time with a pre-existing and closely allied species." The second section is devoted to the theory and evidences of natural selection and to a consideration of the criticisms on that theory, and the last chapter treats of sexual selection with concluding remarks. An appendix, together with notes and a good index, completes the volume.

The book is an able one and seems to be clearly, candidly and philosophically written; it contains a large amount of interesting and curious information and it is well illustrated, many of the illustrations being quite new. We can only add that we have personally derived both pleasure and profit from its perusal.

New Inventions.

NEW CLINICAL THERMOMETER.

FERRIS'S "Perfect Non Plus Ultra" Clinical Thermometer has no contraction in the stem and no chamber to contain superfluous mercury, consequently the whole of the mercury gets thoroughly warmed at once and the temperature is not only recorded more accurately than before but in half the time. The divisions and figures are brought down close to the bulb, so that without increasing the length of the instrument the scale of the thermometer is rendered nearly twice as open as before and is much more easily and accurately read. Ferris's "Perfect Non Plus Ultra" clinical thermometer has a permanent magnified index and a certificate of corrections ascertained by comparison with the standard instruments at Kew Observatory. The Kew corrections are marked on the stem of every thermometer.

THE ASSOCIATION OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE annual general meeting of the Association of Fellows of the Royal College of Surgeons of England was held at 5 P.M. on the 30th ult. at the rooms of the Zoological Society, 3, Hanover-square, W. Mr. T. Holmes, Vice-President of the Association, took the chair, and in expressing his regret for the unavoidable absence of the President of the Association, Mr. George Pollock, said that Mr. Pollock had been obliged to leave town on that day for the purpose of attending the funeral of Sir William Aitken at Netley. The minutes of the last annual meeting having been read and confirmed, the hon. secretary, Mr. Percy Dunn, stated that he had received upwards of fifty replies from Members of the Association respecting the postcard which had been issued announcing the annual general meetings, the annual dinner and the candidature of the nominee of the Association, Mr. John Tweedy, for a seat on the Council of the Royal College of Surgeons. Nearly all these replies were expressive of regret at being unable to attend the meeting and of determination to support Mr. Tweedy at the election on the 9th inst. A telegram to a similar effect from Mr. Mayo Robson was also read. The hon. secretary read the auditors' report, which was received and adopted, a balance in favour of the Association being shown.

Mr. Holmes then delivered an address reviewing the proceedings of the Association as comprised in the report which has been recently issued to its members as well as to the Fellows of the College generally. Amongst other things he dwelt forcibly upon the inexpediency of the action of the Council of the College in coming to a decision upon subjects important both to the Fellows of the College and to the profession at large without consulting their constituents. Such matters, he said, ought to be discussed publicly at the College by the body corporate in the face of the profession and ought not to be decided secretly by twenty-four Fellows in an upper room. He instanced especially the scheme for coöperating with the University of London in examining for degrees and also the scheme for the fulfilment of the five years' curriculum. Referring to a recent assertion that the Association of Fellows was a political body, he repudiated it altogether and said that the Association had nothing whatever to do with politics. The Association had to meet a hostile feeling in certain quarters, but always conducted its business with the strictest regard to the feelings of those who were opposed to it. Mr. George Jackson moved and Mr. J. J. Purnell seconded the adoption of the report and this was carried unanimously. Mr. Alban Doran moved a resolution pledging the Association to use its utmost efforts to secure the return of Mr. Tweedy at the ensuing election at the College. He observed that many able men, after election to councils, never succeeded in understanding procedure and never gained a fair knowledge of by-laws. All who had served on the councils of Societies were aware of this fact. Yet, in order to make a good councillor, skill in procedure and a full knowledge of by-laws were imperative. Mr. Tweedy was one of the very few persons who had a full knowledge of the intricate Charters and by-laws of the College of Surgeons and his ability at public meetings was well known. He would prove a valuable addition to the Council. The resolution was seconded by Dr. W. J. Collins and carried unanimously.

In thanking the meeting for the resolution just passed in his favour Mr. Tweedy said that, as was well known, he had been reluctant to come forward as a candidate, but that he had acceded to the request conveyed to him because he took the warmest interest in the success of the Association, whose only object was to secure the best form of government at the College of Surgeons.

The election of officers for the ensuing year was then proceeded with. Mr. Rivington moved that the present officers and members of the Committee of the Association be re-elected and that the names of Mr. T. B. Keetley, Mr. George Jackson of Plymouth, Mr. Vincent Bell of Rochester, Mr. George F. Helm of Cornwall and Mr. Purnell of Streatham be added to the committee. Vacancies had been created by the decease of Mr. William Adams of Regent's-park and the retirement of Mr. Lawson Tait. It was desirable that the committee should be as representative as possible and it was a great advantage to have Fellows from different parts of the country serving on the committee. It had been suggested to him that he should give an account of his stewardship at the College, but it would be very inexpedient and improper to "reveal the secrets of the prison house." He could not go beyond the published minutes of the proceedings of the Council. From these it would be gathered that progress was being made. Some might desire that the Council of the College should advance rather faster and less like the traffic on a suburban line, but everything now depended on the Fellows themselves. A most important concession had been made by the Council of the College—viz., that meetings of Fellows apart from the Members would be called for consultative purposes whenever the Council thought it desirable and also on a requisition from a certain number of Fellows. This concession was the cardinal point in all reform and if properly utilised would lead to all the other concessions which the Fellows of the College as a body might think desirable. The motion having been seconded by Mr. J. E. James of London was put to the meeting and carried unanimously. A vote of thanks to the chairman terminated the proceedings.

The annual dinner of the Association took place in the evening at the Criterion. Mr. Wm. Allingham occupied the chair. The attendance was curtailed in consequence of the alteration of the date of the dinner originally fixed for the 23rd ult., the Oxford and Cambridge cricket match, and the funeral of Sir Wm. Aitken. The chairman gave the usual loyal toasts and proposed "Success to the Association." In responding to the toast of "The Association Candidate," Mr. Tweedy gave an interesting account of his connexion with the reform movement at the College. The proceedings did not terminate till after 11 P.M.

THE LANCET.

LONDON: SATURDAY, JULY 9, 1892.

SCARLET FEVER is causing anxiety in the metropolis by reason of the large number of attacks removed to the hospitals of the Metropolitan Asylums Board; and it is not unnaturally assumed that this exceptional number of hospital patients indicates a corresponding excess of scarlet fever amongst the population. If we were to consider fatal attacks alone, the cause for anxiety would not be so great. Thus, the largest weekly numbers of scarlet fever deaths in London during the past month were 29, 28, and 21 respectively in the three weeks ending June 18th, June 25th, and July 2nd, these exceeding the average by eleven, nine, and four deaths for the weeks in question. This is in itself not especially alarming. Still there is cause for anxiety in the fact that we have only just entered on the period when scarlet fever usually commences its seasonal rise. So far as attacks apart from fatal cases of scarlet fever are concerned, there does not yet exist much information as to seasonal activity; but Dr. WHITELEGGE, dealing with 23,000 attacks in nine large towns where compulsory notification existed, has shown that a very rapid rise has commonly set in towards the end of July, that it has continued to increase during the months of August and September, and that the maximum has been attained in mid-October, after which date a distinct decline has set in. During the twelve weeks ending June 25th over 5000 cases of scarlet fever were notified in London, the weekly number of attacks ranging from about 350 to somewhat over 550; and not only so, but the number notified during the last few weeks of that period exceeded by over 100 those notified in the previous four weeks. We are therefore, whilst only at the beginning of a critical seasonal period, in face of a substantial increase in the number of scarlet fever attacks. What this may mean it is at present difficult to say, for the reason already given, that we have no trustworthy experience as to the significance of attacks apart from deaths on which to base any precise opinion.

Another element of uncertainty lies in the circumstance that an amount of isolation in hospital is in progress such as London has never before experienced, and that this isolation is going hand in hand with administrative measures of prevention exercised by the local authorities such as have never before been practicable. During the month of June some 2100 to 2200 fresh cases of scarlet fever were certified, and we now learn that no less than 2460 cases were under isolation in the hospitals of the Asylums Board at the beginning of the present month. This is a remarkable achievement, and if we could believe that all attacks are notified and that the average detention of the patients in hospital was for a period of some six to eight weeks, it would mean that considerably more than one-half of the scarlet fever patients of London have been removed from localities where they would otherwise have become centres of infection, it being largely those who are better circumstanced in this respect who have been allowed to remain in their own homes. And this is not all. Disinfection of rooms and clothing very generally follows removal to hospital, and much the same measures are adopted in other attacks on the recovery of the patients. Such measures are becoming more and more general, whilst notification provides means of information as to where these measures can and ought to be applied, which has not formerly been available. Further, notification in the metropolis is followed by information to school authorities as to the danger involved in allowing children from infected houses to associate with fellow pupils in school. This measure must be expected to remove a principal means of infection which has hitherto prevailed. Indeed, our experience of scarlet fever prevention under the existing circumstances of the metropolis are such that a forecast becomes unusually difficult; and the measures of isolation now available both in London and at the Gore Farm Camp, to which some 600 convalescents can be removed, give us reason to hope that we have means at hand which may enable the authorities to cope, as they have never done before, even with so rapid a rise in the number of attacks as marks this very critical period of the seasonal activity of the disease.'

We cannot close these remarks without uttering a warning. When scarlet fever is thus generally prevalent it becomes a habit to look upon every fresh extension of the disease as one which is taking place in the commonly accepted method by aerial diffusion from person to person, assisted, perhaps, by the infection contained in the clothing of those who have been attacked. There have, however, been several recent occurrences of the disease which have seemed strongly to indicate that milk was serving as the vehicle of the infection. One excellent report has been issued on this subject by Dr. J. KING WARRY on an outbreak in Upper Clapton which was said to be associated with the distribution of milk; and other local prevalences in the metropolis have raised suspicion that the same process was going on elsewhere. Under these circumstances it is of the utmost importance that a careful watch should be kept as to the conditions of health and disease in dairies and milk-shops, and that every health officer and sanitary authority should be on the look-out for possible distribution of scarlet fever through the agency of milk. This leads to a further consideration. The Clapton outbreak, to which we have just adverted, could not be traced to any infection of the milk from a human source; and the milk alleged to have been the vehicle of conveying the disease was found to have been derived from a dairy where exceptional precautions as to health and cleanliness were habitually observed. But some of the cows were found to be ailing, the actual ailment at the time of their examination being essentially limited to cracks and abrasions on their teats, with abnormally high temperatures. Past experience compels the utmost caution as to minor ailments, so-called, in milch cows at such a juncture; and it may be well to consider, quite apart from the spread of scarlet fever through its ordinarily recognised channels when once established, whether such seasonal activity as we are now experiencing as regards the affection in the human subject does not in some measure, at least, find its source and its means of rapid diffusion in a bovine ailment, the

prevalence of which is equally favoured by certain seasonal and climatic influences at this period of the year.

DURING the present week two subjects widely differing in their character, but both of paramount importance, have engrossed the attention of the good citizens of Dublin, the burgesses being engaged in the selection of fit and proper candidates to represent them in Parliament, and academicians in their efforts to do fitting honour to the celebration of the tercentenary of the University of Dublin, identical with its own college, that of the Holy Trinity, popularly known by its familiar name, Trinity College. Whatever historic doubts may exist as to the source whence the "Virgin Queen" derived her inspiration, there can be none that the first letters patent were issued by QUEEN ELIZABETH on March 3rd, 1591, thereby winning for herself the proud title of "Fundatrix Collegii Sanctæ Trinitatis *juxta* Dublinum." The presence of "juxta" is a constant cause of surprise to those acquainted with the present position of the College in the very centre of a large and populous city, but unacquainted with its early history. Briefly it may be told how, outside the walls of old Dublin, in the possession of the then existing corporation, were some thirty acres of land which the corporation granted to the college for the erection of its buildings—a fact gratefully borne in mind on this the occasion of the commemoration of its tercentenary by the collegiate authorities; in evidence of which a grace of the Senate has been passed conferring the honorary distinction of LL.D. upon the present Lord Mayor of Dublin, and this compliment has been speedily reciprocated by the corporation conferring the freedom of the city on the present Provost, the Rev. Dr. SALMON. Partly by gifts of confiscated lands and partly, though in a minor degree, by purchase, the University is possessed of a considerable amount of landed property which is let on lease to tenants, who in their turn sublet their holdings. The college found this a satisfactory arrangement, as the "middle man" acted somewhat after the fashion of an agent and collected the rents, and the "middle man" obtained for himself satisfactory profits; but in recent times these profits have to a great extent disappeared, and in some instances have reached such a vanishing point that the direct tenant has surrendered his lease to the college authorities, thereby throwing upon them the onus of collecting the rents from the occupier of the soil. Nevertheless it is pretty generally believed that the collegiate income from this source alone reaches the sum of £50,000 a year, the remainder coming from students' term fees and fees payable for the various degrees.

In the University there are several "faculties," but that of medicine is naturally of principal interest to the medical reader. Until recent years the medical school was at a very low ebb indeed—a fact which can be easily explained. At the time alluded to the University would not recognise any certificates but those issued by its own professors for attendance on the lectures required from candidates who sought the degrees. As a consequence the College of Surgeons refused to recognise such certificates, and required their candidates to produce certificates emanating from other teachers recognised by themselves, so that the student seeking both qualifications had to pay twice over for the required certificates. To the credit of the University it must be stated that it was the first to recognise this anomalous condition of affairs, and after a long struggle, carried on within the walls of the College of Surgeons, principally by the late Drs. BEATTY, ADAMS and HUTTON, and the present Professor RAWDON MACNAMARA, "free trade" gained the day. Since then the University has progressed by leaps and bounds and, thanks to the enlightened zeal and energy of the Rev. Dr. HAUGHTON, its anatomical halls and chemical laboratories have acquired a deservedly high reputation.

During many years it was the fashion to style Dublin University the "Silent Sister," but so far as medicine in the broadest sense of the word is concerned such a reproach was undeserved—witness the writings of GRAVES, STOKES, ROBERT HARRISON, WILLIAM HENRY PORTER, ROBERT ADAMS and CARMICHAEL, the productions of whose pens are classics in medical literature. We must, however, leave it to others to vindicate from this reflection the *alma mater* of USHER, MOLYNEUX, SWIFT, GOLDSMITH, BURKE, BERKELEY, "TOMMY" MOORE, CONGREVE and a host *of alumni* who have carved for themselves niches in the Temple of Fame.

We may briefly note the preparations made to do adequate honour to this important commemoration; it is obvious that the University itself acted in no niggardly spirit in this direction. So far as entertainments go, on the first day took place the garden party in the Fellows' garden; on the second day the tercentenary banquet in the Leinster Hall, to which something like a thousand guests were bidden; on the third day there was a dramatic performance in the Gaiety Theatre; the entertainments winding up, so far as the University is concerned, with the University ball to be held in the Leinster Hall this (Friday) evening. We must express surprise that the play selected for the dramatic performance was the "Rivals" of SHERIDAN, an author who had no connexion with the University, to the exclusion of the tender-hearted, generous to a fault, simple-minded GOLDSMITH, for the production of whose comedy, "The Good-natured Man," the occasion seemed to be singularly appropriate. Rarely played, it would have afforded no opportunity for invidious comparisons—no unimportant consideration when it is remembered that all the male characters are represented by amateurs, the female characters, however, being played by actresses from Mr. EDWARD COMPTON'S comedy company, at present fulfilling a short engagement in Dublin. Failing GOLDSMITH, why was CONGREVE overlooked, whose "Love for Love" would have had the charm of novelty and unsurpassed dialogue? An excellent prologue to the performance of "The Rivals" has been written by Mr. EDWIN HAMILTON. In addition to these entertainments several Honorary Degrees have been conferred in the various Faculties, the recipients of those in Medicine being H.R.H. Duke CHARLES of Bavaria, Sir ANDREW CLARK, JOHN SHAW BILLINGS, THOMAS BRYANT, ADOLF GUSSEROW, JONATHAN HUTCHINSON and GRAINGER STEWART, whilst the College of Surgeons, in honour of the event, conferred its honorary Fellowship on Messrs. BRYANT, BILLINGS, GUSSEROW, and SNELLEN; the President, moreover, issued upwards of 750 cards of invitation to an "at home" to be held to-day (Friday), upon which occasion his Excellency will unveil the bust to be placed in the College in memory of the late lamented Dr. ROBERT MACDONNELL. On Wednesday their Excellencies gave a garden party at the Viceregal Lodge;

and on Thursday the Commander of the Forces gave one at the Royal Hospital, Kilmainham.

Immediately after the reception of the guests and delegates by the Provost in the Examination Hall, favoured by beautiful weather, a procession in full academic robes proceeded on foot to St. Patrick's Cathedral, to attend the commemoration service; and the crowds which thronged the streets witnessed a sight the like of which they are not likely ever to see again. The University of Dublin is to be heartily congratulated on the great success of its tercentenary commemoration.

THE reference in the Report of the Select Committee of the House of Lords on Metropolitan Hospitals and many subjects connected with hospitals deserves a more detailed notice than we were able to give it in one number. We propose, therefore, to deal specially with a few of these subjects as opportunity may offer. Of these one of great interest is the question of Poor-law infirmaries, their general administration and their medical efficiency. The older members of the profession will well remember the dismal provision for the sick poor in the old workhouses. Nothing could be more unsatisfactory. The nurses consisted of paupers a little less infirm than those whom they nursed. The equipment of the workhouses was deficient in all that goes to mitigate the severity of suffering. The scandal culminated in the case of TIMOTHY DALY who suffered from rheumatic fever in a London Workhouse and whose feet projected several inches beyond the edge of his bed. His death led to the investigations of THE LANCET into the general condition of the sick in workhouses, and these in their turn led to the memorable legislation of 1867 known as Mr. GATHORNE HARDY'S Act and the creation of the Poor-law infirmaries. The establishment of these institutions and of the asylums for infectious diseases created new ideas of the duty of the State towards its sick poor and has altered the feeling of reluctance with which such poor regard state assistance in the form of hospital treatment. Insensibly in twenty years a new set of twenty-four hospitals has grown up with 12,445 beds in them. Nor do we seem to have got to the end of this provision. Many of the workhouses, notably Bethnal Green, are without infirmaries; the sick in them are nursed largely by untrained or pauper nurses.

We are much interested in all the bearings, medical, educational and political of this great hospital system of Poor-law infirmaries. It exceeds already the voluntary hospitals in the number of its beds by about 4000. It is still indeed far behind in the quality of its nursing and in the quality of the medical service supplied to the patients. But having said so much on one side we have much pleasure in noting the high terms in which the Committee speak of the general management and the medical and nursing efficiency of these institutions. We regard this as distinctly creditable to the medical profession. The medical officer of these Poor-law infirmaries is not only the medical superintendent, but he is responsible for the general control of the whole establishment. This arrangement is of course open to the objection actually made that an officer who is responsible for the general control of an establishment with 700 or 800 beds, with perhaps only one assistant, cannot have any leisure for the proper and adequate treatment of so great an amount of suffering humanity, We cannot deny the force of this argument. But it remains true that no serious faults have been exposed, that the general administration is good and that no complaint of neglect of the sick emerged in the course of the inquiry. We see in this another proof of the administrative faculty which abounds in the profession. It is well known that these institutions are served by many able practitioners, who strangely prefer the appointments with their limited incomes (varying from £300 to £500 a year) to the chances of general practice with its uncertainties, its unpaid bills and its rough and irregular work. All the same we are glad to see that the question of the sufficiency of the medical arrangements of these infirmaries was distinctly raised and that important suggestions have been made for its improvement. It requires little imagination to understand that a medical superintendent and one or even two assistants, with 700 patients on their hands, can have but little time to give to individual cases, and that such a number of sick must include many cases of difficulty, of danger, and of suffering on which the opinion of a medical or surgical consultant should be taken. The provision for such consultation should be systematic as it is in Birmingham. We are told in the Report that some superintendents admitted the necessity for some such provision. Some said it was allowed and paid for by their guardians; others said they found no difficulty in getting hospital surgeons and physicians to come and see such cases without fee. But it is due alike to the superintendents and to the patients that a regular provision for consultations should be made in some form or other. The Committee of the House of Lords are much impressed with the evidence in favour of turning the clinique of the poor-law infirmaries to account for the furtherance of medical education. They allege that there was a remarkable uniformity of evidence in favour of this and of the belief that such an arrangement would not be disliked by the sick; indeed that it would be positively beneficial to them. The Committee were told by many witnesses that it would tend to secure careful examination of cases, to discourage routine in treatment, and that the clinical experience to be gained in a Poor-law infirmary would be different from that of the general hospital, both in respect of its in-patients and out-patients. They ventured to suggest that the Poor-law infirmary appointments would especially be useful to men just qualified, or in the fifth year of their studies which has just been added by the General Medical Council. This proposal is not new. It has been repeatedly before the Medical Council. But, spoken of with so much favour by the Lords' Committee, it is sure to come into fresh and serious consideration. It is one of many proofs that with all their perfection our existing hospitals do not teach the student everything and all classes of disease. The exact way in which the Poor-law infirmary is to be brought into line for educational purposes with the hospitals or with general practice is a matter for much reflection. Such a step would of itself involve a reconstitution of the medical staff. We should sincerely regret any change that would affect the authority of the medical superintendents who have so well managed these institutions. But without doing this it will be possible to increase the medical staff to the advantage

of the patient and the relief of the superintendent, whose importance, we venture to think, would only be increased. We have only room for one more word in regard to these great Poor-law infirmaries. It is one of caution. There is a danger that these institutions may be made too easy and pleasant and so become pauperising. "It would seem," says the Committee, "that the excellence of the infirmaries and their separation from the workhouse are likely to exercise, and in fact do exercise, a distinctly pauperising effect on the poor." "Many patients are artisans in receipt of good wages." There should be no parsimony in dealing with actual pauperism associated with sickness, but there is a note of warning in these sentences of the Report against the encouragement of pauperism which we commend to the attention of all concerned.

THE short paper in the current number of the *Nineteenth Century* on "The Increase of Crime," by the Rev. W. D. MORRISON, raises one of the most important and also one of the most difficult of social questions. At first sight it might seem a very simple matter to determine whether or not crime is on the increase; in reality it is very difficult. With such important and clearly defined crimes as murder or manslaughter there is not much difficulty. The total number reported to the police, the number of trials, convictions &c., will afford a fairly satisfactory basis for calculation. But we are on very different ground when we seek to determine whether the criminal population is increasing or declining. The average number of persons in our gaols depends upon many conditions apart from a growth or decline in crime; depends, for example, on the activity or negligence of the police, on the severity or leniency of magistrates and other officers of the law, on the prevailing tendency to inflict long or short sentences, and lastly depends to a very important extent upon legislation. Crime is partly "natural"—i.e., there are some crimes that are universally recognised as such by all civilised men; but it is also partly artificial or law-made—i.e., an act may be criminal in one country that is not under legal ban in another. The Elementary Education Act of 1870 and the Criminal Law Amendment Act of 1885 added new offences to our Statute-book, and it is obvious that convictions thus arising could not be fairly reckoned in any comparative estimate of the prevalence of crime at the present day and at some past period. It is thus clear that the question is an extremely complex one and that criminal statistics must be scrutinised with the most jealous care before any confident conclusions can be drawn.

Mr. MORRISON first draws attention to the number of cases tried, whether summarily or on indictment, during the last three decades. The figures are as follows:—

	Yearly average of cases.
1860–67	466,687
1870–79	628,027
1880–89	701,060

Here we are face to face with an apparent very substantial increase in crime. It is satisfactory, however, to learn that offences against the Elementary Education Acts alone account for more than half a million of cases during the last two decades. The question at once arises whether the apparent increase of crime is not sufficiently accounted for by the increase in population. On this point Mr. MORRISON furnishes us with the following statistics—viz., "Basing our calculations upon the estimated population at the middle of each decade it comes out that in 1860–69 one case was tried annually for every forty-four of the inhabitants of England and Wales; in 1870–79 one case was tried for every thirty-seven inhabitants; and in 1880–89 one case was tried for every thirty-eight inhabitants." It would thus appear that crime has been almost stationary during the last two decades, but that these decades indicate a substantial increase on the previous one.

The quality of the crime is obviously a point even more important than the mere number of offences. Taking murder as the most important of all crimes, we find that in the decade 1860–69 the yearly average of murders reported to the police was 126; in 1870–79 the yearly average was 153; and in 1880–89 the yearly average was 160. Even allowing for growth of population there is here a substantial increase in the gravest offence known to the law. The average annual number of indictable offences, which was 2315 in the decade 1870–79, had risen to 2562 in the decade 1880–89. The annual average number of offences against property with violence, which was 1483 in the decade 1870–79, was 1850 in the decade 1880–89. The annual average of offences against property without violence had, however, shown a decided diminution. The number was 10,701 in the former decade, 8049 in the latter. This decline is attributable to the operation of the Summary Jurisdiction Act, which has removed many offences of this nature from the list of "indictable offences," and so this decline cannot be interpreted as indicating a real diminution in this variety of crime.

Facts tend strongly to show that the predisposition to crime is greatest in the greatest centres of population. Thus one policeman was required in the City of London and in the Metropolitan Police District for every 312 of the population as enumerated in 1881; in the English boroughs one policeman was required for every 697 of the population; in the counties only one policeman was required for every 1150 of the population. Mr. MORRISON draws from these statistics the conclusion that "where there is most civilisation there is also most crime." We entirely dispute the justice of this conclusion. Great cities cannot in any true sense be said to be generally and in all parts more highly civilised than the adjacent country districts. The slums and alleys of great cities furnish the deepest depths of barbarism to be found in the civilised world. Further, great cities are the great foci towards which gravitate the streams of thriftlessness, vice, vagabondage and crime. To say that because great cities furnish an undue proportion of crime civilisation tends to make men criminal is, it seems to us, to advance one of the most dangerous and disheartening of fallacies.

We may, lastly, look at the statistics of the prison population, although, as we have already pointed out, this is a very misleading gauge of the growth or decline of crime. The yearly average of persons committed to prison in the decade 1860–69 was 127,690, in 1870–79 it was 154,145 and in 1880–89 it was 170,627. These figures indicate not only an absolute increase in the committals to prison, but also an increase in proportion to the population. The figures

for the reformatory and industrial schools show an even larger increase. The rapid and uninterrupted increase in the police force points in the same direction.

Mr. MORRISON concludes, first, that there is a very substantial increase in crime now in progress in our midst, and secondly, that this increase is almost wholly due to the excessive concentration of masses of population in large cities. Mr. MORRISON'S position and the painstaking attention which he has bestowed upon the elucidation of this important subject entitle his opinion to great weight; but before accepting his somewhat pessimist conclusions we should like to have some aspects of the subject treated which he has not dealt with, or at least not dealt with in a way to exhaust the discussion. For example, to crimes the rule is eminently applicable that for a just appreciation they must be weighed, not counted only; and Mr. MORRISON'S statistics appear to us open to cavil in this respect. Ten little crimes may testify to less depravity in a society than one great one; and until it is made out that the figures from which the writer's inferences are drawn are above the suspicion of equating unequal things, we shall be disposed to cling to the more hopeful view of the modern record of crime which other authorities than Mr. MORRISON are able to adopt.

Annotations.

"Ne quid nimis."

THE INTERNATIONAL MEDICAL CONGRESS OF 1892.

THE opinion we have from time to time hazarded as to the month and week in which this great assembly should meet in Rome has just been confirmed at the last conference held *ad hoc* by the Comitato Centrale. We now know that the last week of September has been officially fixed as that during which the Congress will sit. That this is a matter of vital importance to the success of the meeting no one who is cognisant of the character of the Roman climate in the late summer and early autumn can fail to appreciate. Exaggerated though it be, particularly after the activity of the municipal ædiles during the last twenty years in reclaiming outlying spaces and building over intra-mural tracts previously tenanted only by the malarian bacillus, the impression is still a prevailing one that from the close of June to the middle of September Rome is not a healthy place of sojourn—an impression reinforced by the immemorial usage of its inhabitants, who for that interval descend to the seaboard or go up to the mountains to escape the heat and the fever-laden breath of the Campagna. To invite the profession from all parts of the world to assist at the Roman Congress during the days of August would simply have been to court the refusal of nine-tenths of those whose presence might have been counted upon. In full cognisance of this the Comitato Centrale have been well inspired in their selection of the time of meeting, and though the last week of September has its drawbacks, particularly for those surgeons and physicians whose duties require them to be at their posts at the opening of our medical schools, still there is just enough interval between the rising of the Congress and the beginning of the winter session to allow of their assisting at the former and being not too late for the latter. We trust, therefore, that the decision of the Comitato Centrale, arrived at as it has been after much consultation of the convenience of the profession in two hemispheres and in many countries, will be found to collide with no great number of "previous engagements," and to favour as far as possible the truly representative character of this greatest of international gatherings. "Little more than a year," writes an Italian correspondent, "separates us from the memorable occasion which will confirm Italy's right to sit among the nations who, with fraternal confidence in each other, labour in the name of science. The high importance of this approaching reunion has been recognised abroad not less than in the peninsula, inasmuch that while a powerful phalanx of the physicians and surgeons of the Alta Italia have sent in their adhesions the post brings a daily shoal of letters in which the leading lights of foreign medicine, the scientific academies, the associations, and the institutes of Europe and America announce with the most gratifying expressions of goodwill towards Italy their intention to come in person or to be worthily represented. In the next few days the Comitato Centrale will address an identical appeal to all the physicians of central and southern Italy, an appeal to which the response, I need not say, will be at once unanimous and enthusiastic." The Comitati Locali will before the month is out be not less numerous than those which have for some time been in working order in Lombardy, in Piedmont, in the Venetian territory and in the Emelia. The Italian Government, we may add, coöperates loyally and effectively with the profession in its endeavour to make the Congress as brilliantly successful as any of its immediate predecessors, and will, we trust, enable the great promoter of the gathering, Dr. Guido Baccelli, to complete the mighty undertaking of his life, the Roman Policlinico, in time to show his brethren from abroad how Italy can and will improve upon her memorable past in pathological research and in therapeutic resource. To have crowned the edifice of such an institution in presence of the grandees of medical science and medical art will more than entitle the eminent consultant, who is not less distinguished as a patriot than as a physician, to say "Vixi" and to enhance the pride with which he will echo in Rome the welcome that greeted the profession on the façade of the Congress Hall at Berlin, "Universi Medici Orbis Terrarum Salutamini!"

MEDICAL AID SOCIETIES AND THE PROFESSION.

OUR correspondence columns have recently afforded evidence not only of the great and very natural interest taken by our readers in the subject of the bonds into which the medical officers of friendly societies are commonly required to enter upon taking up their appointments, but also of the serious hardship which the observance of the covenanted conditions not seldom entails. It is easy to understand that in a discussion of this kind the disputants should be led to adopt strong views, and in no way surprising if they should be betrayed into expressions of opinion not altogether warranted by the facts or the law, as the case may be. This has, we believe, happened in the course of the discussion which has recently occupied our columns. Some of our correspondents have opined that engagements which would prevent a man from practising on his own account in the neighbourhood in which he has practised as an officer of the medical aid society are in no way binding and may be cast to the winds when the opportunity of infringing them arises. Now if this were sound law it would be very questionable morality, and if adopted as a line of conduct from the first would be such as no casuistry could justify. It may well be that a man who has been tricked or coerced into a position which he never intended to take up, but into which he has been forced either without his knowledge or in spite of his protest, may feel himself at liberty to accept any means of escape which the law extends to him. But any man who should sign an invalid bond knowing it to be invalid and intending, if occasion should arise, to

take advantage of the flaw, would be guilty of dishonourable conduct which no technical justification could excuse or palliate. We think, therefore, that the legal question is not of the importance which some of our correspondents have been inclined to attach to it. The only way in which, without stooping to unworthy shifts, a medical practitioner can defend himself against imposition is by resolutely refusing to undertake any obligations which he will not, when the time comes, be prepared honourably to discharge. But while we adopt this higher ground of morality as that upon which a question of this sort should be decided we have reason to think that some of our correspondents have seriously misapprehended their legal position. We understand that it is quite possible for a bond to be drawn which will bind a man not to take away from an institution with which he has been connected the patients with whom he has there been brought into contact, and which in furtherance of this undertaking will shut him out from practice within a reasonably defined area. Whether a particular bond will or will not be effectual for this purpose must of course depend upon its terms, and if any of our readers who may have such bonds in their possession will furnish us with copies for publication we shall be happy to obtain a legal opinion upon their effect for the benefit of the profession at large. The matter is undoubtedly of great importance, and it would be well for all parties that the legal position no less than the ethical questions involved should be elucidated by full and sufficiently informed discussion.

THE PROGRESS OF CHOLERA.

CHOLERA has made some further and substantial progress in South-Western Russia. At Baku on the Caspian the outbreak is of considerable dimensions, and no less than ninety-one deaths took place there on July 2nd. The port of Petrovsk and the town of Astrakan at the mouth of the Volga have also been invaded, the western shore of the Caspian being thus attacked at three different points. South of the Caucasus the number of places invaded has also increased, and at the present moment Tiflis, Elizabetopol, Shamachi, Erivan and Shusha are seats of the disease. Another line of extension is up the Volga, and this is the more ominous because this is the season of the year when a large traffic up this river commonly sets in. The towns of Tzaritzin and Saratov have already been attacked, and the province of Samara, which immediately abuts on that of Saratov, is also stated to have suffered from such attacks. One of the greatest dangers to Europe will lie in extension of the disease to Black Sea ports, from whence, notwithstanding the restrictions that may be imposed, there will be risk of infection to such European ports as Odessa. In the meantime the Sanitary Board at Sofia has ordered ten days' quarantine upon vessels arriving at Bourgas, Varna, and Baltchik from Russian ports in the Black Sea between Soukham Kale and the Turkish frontier. In Russian Turkestan and Bokhara the disease is still maintained, but whilst it has distinctly diminished at Meshed no other serious extension has taken place. On the other hand certain journals in the Caucasus announce that the disease has broken out in the neighbourhood of Bagdad in Mesopotamia. The news which we publish from our special correspondent as to cholera in Paris is disquieting. That form of disease which we are wont to style English cholera often prevails in large centres of population during exceptionally hot weather and Paris has suffered from such weather. Severe diarrhœal diseases also tend to supervene when sewage-polluted water is being consumed and some parts of Paris and its outskirts are now receiving Seine water which must be regarded as contaminated by sewage. But neither of these conditions is as a rule associated with anything like the mortality which is persistently maintained around Paris, except when either true cholera or severe enteric fever are the causes of it. According to M. Monod, the energetic Director of Public Health for France, the prevalence to which we advert caused 159 deaths during the three months ending June 30th; it is mainly confined to the loop formed by the Seine west of Paris, and it is positively declared that no case of exotic cholera has taken place. This view has, up to recently, been also supported by Dr. Proust. To these high opinions, if still maintained, we feel bound to defer; but, on the other hand, we believe we are right in saying that the special districts referred to are not the only ones which have received Seine water during the recent drought; that the interior of Paris, where there has been no similar outbreak, has had some share of the same water; and that the mortality is of quite an exceptional character even for the localities attacked. When twelve and fourteen diarrhœal attacks terminate fatally day by day in a limited area and the disease is not infantile diarrhœa the circumstances of such fatality are sufficient to cause apprehension. Aubervilliers, one centre of the epidemic, has traditions of true cholera which are by no means remote, and, in addition to that district, Courneuve, St. Denis, La Plaine, Ile St. Denis, Suresnes, Courbevoie, Asnières, Clichy, Rueil and Colombes have also been seats of the disease. We trust that the measures which are being taken to prevent further diffusion of the outbreak will be successful and that the inhabitants will take the advice offered to them and boil all potable water so long as it may be necessary to draw it from the Seine. The recent occurrence of alleged cholera on board the *Crofton Hall*, which had to return to Calcutta in consequence of the mortality amongst its crew, has turned out, as we anticipated, to be an outbreak of ptomaine poisoning from unwholesome meat. This is the decision at which Dr. Simpson, the city health officer, and Dr. Forsyth have arrived. We are glad to be able to state authoritatively that, notwithstanding rumours and statements to the contrary, no case of Asiatic cholera has occurred in the Port of London, or, indeed, in any part of the metropolis.

MEDICAL PRACTITIONERS AND THE GENERAL ELECTION.

IT is certainly a somewhat unique occurrence for a body of medical men to interview a candidate for parliamentary election, with a view to ascertaining whether he is sound on important topics in which they are interested. "Tempora mutantur, nos et mutamur in illis." In these days, when every profession and separate interest has come to press forward its claims on the attention of Parliament, those who are too backward and modest to do so are apt to be forgotten and neglected. It may be owing to this, to some extent, that the medical profession has never received that honourable recognition and distinction from Parliament to which it is so justly entitled from the eminent services it incessantly renders the nation and from the learning and ability of its members. Hence we cannot but highly commend the action of the medical practitioners of Bradford who waited on Mr. Byron Reed, one of the candidates for Parliament in that borough, and laid before him some important questions on which they wished to know his opinions before the polling-day. The action of the deputation was all the more praiseworthy seeing that, following the high traditions of our profession, they sought rather to gain benefits for the public than merely to forward their own particular interests. It is true they uttered a protest against legislation which has recently singled them out from the rest of the population and placed them under penal obligation to render services to the public for which in some instances they receive no remuneration Medical practitioners are not State officials. If the State

wishes to reap the fruits of medical science it must requite the services rendered. The most obvious way of doing this would be by assisting the profession in the acquisition of that knowledge which the State is now coming to see is indispensable to the well-being of the public and by protecting medical men in the practice of their profession. The subjects which Dr. Hime, as the chief spokesman, referred to are of importance and the deputation deserves credit for having drawn public attention to them. A report of the meeting will be found in another column.

THE REPEAL OF THE CONTAGIOUS DISEASES ACTS.

THE *Admiralty and Horse Guards Gazette* of the 25th ult. contains, under the heading "Free Trade in Disease," a most able article showing the evils which have resulted from the repeal of the Contagious Diseases Acts, and especially as regards the increase of disease among the men of the army and navy, both abroad and at home. The article deals most severely, but not unjustly, with those persons of both sexes to whom the country owes the repeal of those Acts. Fortunately, the issue is now changed. When the Acts were in force it was contended that all the improvements attributed to the Acts were due to other causes. But now that they have been repealed disease is more rife than ever and is increasing in such a ratio that the attention of the authorities must soon be called to the fact. Whatever may be the political constitution of the majority of the new Parliament and whether the present Ministry will remain or a new one be formed, it will be the duty of some member in the interests of the army, navy, and civil population to call the attention of the House of Commons to the disastrous results of the repeal of the Acts and to ask for an inquiry thereinto. Whether this should be by a committee of the House of Lords or the House of Commons or by a Royal Commission need not be just now discussed. For the present it is gratifying to see that our appeal has been responded to and that a representative of the lay press has taken the matter up, and that we are not left with our medical contemporaries to fight the battle alone. We trust that other representatives of the lay press will exert their power and influence in a cause which does not merely concern soldiers and sailors, but everyone who has at heart the welfare of his fellow-creatures.

A GREEK MEDICAL WORK 2000 YEARS OLD.

IN the last number of the *Classical Review* Mr. F. G. Kenyon, of the British Museum, who last year edited the newly discovered papyri of Aristotle and Herondas, describes another similar manuscript recently obtained for our national collection, which contains an ancient treatise upon Medicine by a Greek author, probably of Alexandria. The work, which has apparently hitherto been lost, is of much interest, and the following *résumé* of the state and contents of the manuscript condensed from Mr. Kenyon's report will indicate its importance. The papyrus is of tolerable size, measuring twelve feet, and bears thirty-nine columns of writing, each about three inches in width. Towards the end the writing is more compressed and the concluding portion, which comparatively contains the largest amount of matter, is fortunately in exceedingly good condition, but the other parts of the papyrus are both torn and rubbed and the text frequently barely legible. As to the treatise itself, the first eighteen columns are devoted to quotations from earlier writers as to the origin of diseases and present to us so many quotations from Greek medical authors of the earliest times that if the text can be tolerably well restored it will prove most valuable. Among the writers cited are Euryphon of Cnidus, Herodicus, Hippocrates, Timotheus of Metapontum, Philolaus of Croton, Polybius and Menicrates, Dexippus of Cos, Petron and Philistion, and Alcamenes. In quoting from some of these writers the author tells us he obtained their extracts from a work of Aristotle. Mr. Kenyon suggests this was not an authentic work of that philosopher, but the one cited by Galen, as bearing his name, which was really written by his disciple Menon, and thinks it probable that much of this papyrus text is derived from Menon's work. These quotations appear to cease with authors of the fourth century B.C., and then the more original part of the work is taken up. Unfortunately, just here the writing is very defective, but it can be gathered that much importance is attached to an explanation of the rival views of Herophilus and Erasistratus. The latest author quoted is Alexander Philalethes, who flourished towards the termination of the first century B.C., and the omission of all reference to Galen would seem to show that the recovered treatise was written originally before his time, though this papyrus may be a later edition. It is to be hoped that some of the medical societies may undertake to assist a competent scholar to edit this work, the funds of the British Museum being more properly applied to the acquisition than the publication of such treasures.

INFANT INSURANCE AND INFANTICIDE.

WE will not dispute the fact that there is an essential difference between child insurance and baby farming. The distinction, however, it is to be noted, consists in many cases mainly in a primary intention which has now become obsolete. For lack of any visible proof to the contrary we are forced to the conclusion that practical issues must explain the true purpose in either case and thus the terms are commonly found to be really interchangeable. A fresh illustration of their close relationship was afforded by a case recently decided. The defendants, a man and his wife, became possessed of an infant presumably illegitimate some four months ago and received with it a maintenance allowance of £20. The husband took out a policy for the child. Then followed a period of neglect, starvation, disease and general misery, mercifully terminated by the infant's death. To our mind, and especially in view of the history of many similar cases, there is an evident suggestiveness in the association of circumstances here noticeable.

THE RECENT BALLOON ACCIDENT.

THE public will hardly be satisfied with the conclusion come to at the official inquiry as to the cause of the fatal balloon accident on June 29th—namely, that no blame attached to anyone. The fact of a disaster having occurred need not, of course, imply intentional neglect, but it certainly could not have taken place under conditions of weather believed to be entirely favourable without some oversight. An examination of the evidence teaches us that as far as is known there was no fault in the original construction of the balloon or in its general management after it ascended. On a previous occasion the aeronaut, Mr. Dale, narrowly escaped a similar fall from the unexpected opening of the valve. This does not seem to have occurred on the present occasion. A part of the neck of the balloon had to be repaired before the ascent, but neither does this fact suffice to explain the accident. The only possible clue to its cause obtainable thus far is connected with the material structure of the balloon. We are told that it was not new, that it was made of cambric, that after the previous ascent it had been wetted, oiled, rolled up and put away; and that when unfolded for use on the last occasion it felt hot. In the fact just mentioned we may probably trace, if not the actual progress of chemical change, at least an assisting circumstance. Moisture and heat are allowed to act for a week upon a quan-

tity of oiled cambric and decomposition inevitably follows. The question is whether such decomposition would so soon rot the structure as to explain the fatal occurrence. No other but an affirmative answer is, we fear, possible. The neck was not tied, and thus undue pressure by the gaseous contents upon the inflated bag was avoided. Here, however, another question suggests itself. Is it not possible that any dampness of this important part of the balloon could have impaired its efficiency as an exit for surplus gas? Whatever the answer to this query, the fact is clear that after rising some 600 feet the huge bubble burst either from excess of gas pressure or decay of its delicate envelope, or both. A further inquiry into the circumstances is clearly indicated. We would suggest that if instituted it should comprise a careful examination of the condition of the cambric used in this instance, and that it should be partly experimental. Some authoritative utterance as to the materials other than silk which are best suited for balloon construction and the methods of their management is evidently called for as a condition immediately affecting the safety of such ascents as that which has just ended so unhappily.

WOOLWICH AND PLUMSTEAD COMMONS.

THE military authorities who, as was stated in a recent issue of THE LANCET, had forbidden cricket and football on the whole of Woolwich Common except in one damp and irregular corner, have somewhat unexpectedly made an important concession which will add largely to the facilities the youths of the neighbourhood at present enjoy for their games. A strip of ground at the top of the common, near the Herbert Hospital, measuring nearly half a mile in length by perhaps 250 yards in breadth, is to be allowed to be used after midday—except on the rare occasions when it may be required for parades—on condition that the local board keeps order and sees that a few simple regulations are observed. The military authorities have also shown themselves desirous of meeting the needs of the youths who live a little further to the east by offering for games such portions of that part of Plumstead Common which is still under their control and is not actually required for the evolutions of the troops. Still further to the east a magnificent addition is just being made to the recreation grounds of the people by the opening of Bostall Wood, which will be under the control of the London County Council. In consequence of the facilities provided by the Woolwich Free Ferry all these open spaces, as well as the large tract of beautiful country round Shooter's Hill, Eltham, Chislehurst and the Crays are being more and more utilised for recreative purposes by the inhabitants of Mile End, Bromley, Bow and other parts of East London, who may be seen almost any morning now driving through Woolwich in brakes on their way to spend a "happy day" at some of the numerous rural resorts offered by the north-west corner of the "garden" county, which at the present time is at its loveliest.

THE ADVANTAGES OF BODILY EXERCISES.

IN the *Journal of the American Medical Association* for June 4th is an interesting paper by Dr. J. Madison Taylor on the Influence of Bodily Exercises upon Length of Life. He commences by enunciating two propositions: (1) That judicious activities of the body tend to maintain and increase its efficiency; and (2) that the hurtful effects of violent athletic competitions are popularly overrated. The first of these propositions is obvious and he therefore chiefly deals with the second. Against the growing interest in athletic matters there are constantly urged objections to the effect that many perfectly healthy young men are injured beyond repair by strains and shocks to vital organs received in the course of training or competitive sports, even among those who avow much confidence in the value of physical exercise; yet many declare the pity of it because such havoc is wrought thereby. Instances are cited, rather vaguely it is true, of fine fellows utterly wrecked by contests on land or water, of lives cut short by overtasks at so-called sports. After pointing out how important it is for medical men to define and point out dangers and urgently insist on their avoidance in such cases, Dr. Taylor proceeds to argue that even the best and wisest of medical teachers can err in opinion and cites as an example an assertion of Dr. B. W. Richardson: "I venture to affirm there is not in England a trained professional athlete of the age of thirty-five who has been six years at his calling who is not disabled"; and the same author as saying: "When the artificial system of training ceases, the involuntary muscles, the heart especially, remain in strength out of all due proportion greater than the rest of the active moving parts of the organism." Dr. Taylor maintains that this authoritative statement has swayed the judgment of thousands of thinking men. He has had these views on the damage done to involuntary muscles quoted to him again and again. Such cases he considers are indeed possible and from such causes do they come in the laborious ranks of iron-workers and those who put forth in long days excessive and continued muscular exertion. Among professional athletes the heaviest strains must come, as upon the output of the most concentrated force alone comes to them honest reward. Dr. Taylor has collected the brief histories of a score of these men now living which he thinks at least illustrate how vigorous and sound such men may be even long after the age limit which Dr. Richardson has assigned to them. These histories are interesting and some of them very remarkable and Dr. Taylor is strongly of opinion not only that the judicious pursuit of bodily exercises, either in the line of ordinary avocations, special duties, or sports, tends greatly to maintain and enhance the vigour of both body and mind, but also that the hurtfulness of severe muscular exertion short of profound exhaustion is merely temporary and recoverable and that dangers to internal organs and vital centres are comparatively rare.

TREATMENT OF PHTHISIS BY CREASOTE AND GUAIACOL.

DR. F. P. KINNICUTT, in delivering the Middleton-Goldsmith Lecture for this year in New York,[1] chose as his subject "New Outlooks in the Prophylaxis and Treatment of Tuberculosis." He considered very carefully the various methods of treatment which had lately been introduced and gave his experience of those he had tried. One of the most interesting series of records are those cases treated by creasote and guaiacol. Dr. Kinnicutt wished to test the practicability of employing a very large daily dosage of the creasote preparations and to determine, if possible, any advantage which this method might possess over their use in smaller quantities. Several of the patients selected for this treatment presented in a well-marked degree many of the symptoms—namely, hectic, sweats &c.—attributed to the toxic influence of the products of the bacillus and were therefore well adapted to test the effect of creasote upon such manifestations. A tabulated report is given of seven cases which were treated with subcutaneous injections of guaiacol, rapidly pushed to a daily dosage of one gramme, and five cases with creasote by the mouth, also rapidly increased to *six grammes* daily. In four of the former cases there was little, if any, appreciable change in the physical signs of disease. In one of them, however, the general condition greatly improved and there was a gain in weight of eight pounds; in one the weight decreased by one pound and three-quarters, in one there was a loss of four pounds, in one the weight remained stationary; in the three remaining cases there was a progressive increase of the pulmonary

[1] Boston Medical and Surgical Journal, May 26th, 1892.

lesions. No influence upon hectic, when present, was observed. Night sweats, however, were affected favourably. In a single case suffering from chronic nephritis (confirmed by necropsy) a marked increase in the albuminuria was observed when a daily dosage of one gramme was reached. The treatment was then discontinued and the albuminuria gradually diminished. In no other case treated either with guaiacol or creasote did any trace of albumen appear in the urine, although examinations were made every other day. In a single case, where the maximum dose of guaiacol was reached, the urine became dark in colour and very similar in appearance to urine containing carbolic-acid products. In the cases treated with creasote two exhibited no appreciable difference in the physical signs. In those there had been a gain of one pound and a loss of three pounds respectively. In the three remaining cases there was a progressive increase of the lesions. The effect of a very large daily dose of creasote upon hectic sweats corresponded to that noted in the use of guaiacol. Entire tolerance of six grammes (over one and a half drachms) of creasote was exhibited by three of the five patients. One complained of slight gastric discomfort when a daily dose of five grammes was reached. Carbonate of guaiacol was also tried. In addition to possessing the advantage of being tasteless and odourless, it seemed to have a beneficial effect on the appetite. The conclusions which Dr. Kinnicutt formed from a careful study of these cases were: That both creasote and guaiacol in certain forms could be given in very large doses with entire tolerance and without injurious effect; that such doses apparently possessed no advantages over much smaller ones and had no greater effect upon hectic and night sweats; that subcutaneous injections of the drug possessed no advantages over administration by the mouth; that whatever beneficial influence creasote might exert in pulmonary tuberculosis could be effected with a comparatively small dosage; and that favourable results could be expected only by its continuance and prolonged employment.

THE RESTRAINT OF JUVENILE SMOKING.

IT is time that the attention of all responsible persons should be seriously directed to the prevalence and increase of tobacco smoking among boys. Here and there, as we have recently shown,[1] there have been observed expressions of a strong repugnance existing in the public mind against this form of juvenile perversity; but we still lack the support of a general and outspoken objection to its continuance. At the same time we feel assured that no man who has really given any thought to the matter would hesitate in condemning the injurious folly of this practice. Stunted growth, impaired digestion, palpitation and the other evidences of nerve exhaustion and irritability have again and again impressed a lesson of abstinence which has hitherto been far too little regarded. A further stage of warning has been reached in a case which lately came before the coroner for Liverpool. A lad was in the habit of smoking cigarettes and cigar ends, and after an attack of sickness died somewhat suddenly. The post-mortem examination revealed fatty changes in the heart, which there was little doubt, as the verdict held, had been fatally supplemented in their influence by the smoking habit referred to. This of course is an extreme example. It is also, however, after all, only the strongly coloured illustration of effects upon health which are daily realised in thousands of instances. Not even in manhood is the pipe or cigar invariably safe. Much less can it be so regarded when it ministers to the unbounded whims and cravings of every heedless urchin. Clearly there is need of some controlling power here. The parent in certain classes is almost as ignorant of consequences and probably often quite as apathetic as his boy. Where he can be roused to the active exercise of his authority in repression he should be. In very many cases he cannot, and we have therefore no hesitation in asserting once more our conviction that it is incumbent upon the Legislature, in view of its known pernicious effect upon mind and body during boyhood, to restrict this habit by an age limit which will fall outside this period.

[1] THE LANCET, May 14th.

CARLILL v. THE CARBOLIC SMOKE-BALL COMPANY.

To those among our readers who are familiar with the ways of the quack medicine vendor the facts proved the other day by Mrs. Carlill in the action which she brought against the Carbolic Smoke-ball Company will occasion no surprise. It seems that the company, which trades in a commodity called the "carbolic smoke-ball," had offered, as an inducement to the public to patronise their shop, a guarantee of £100 that any person using their nostrum should enjoy thereafter immunity from influenza. Mrs. Carlill took the advertisers at their word, bought and used their prophylactic and thereafter suffered, like many of her unprotected neighbours, from an attack of influenza. The promise of immunity having thus been falsified the lady brought an action to enforce the alternative promise of a solatium of £100 and was met with a defence which put forward every possible ground of technical objection to the plaintiff's claim. We are glad to learn that in spite of the ingenuity of their legal advisers the defendants have been held liable to make good their promise. People who are silly enough to adopt a medicine simply because a tradesman is reckless enough to make extravagant promises and wild representations as to its efficiency may thank themselves chiefly for any disappointment that ensues. Still for this folly, which is only foolish and nothing worse, it is possible to feel sympathy when the disappointment comes. It is a pleasant alternative to learn that the dupe has been able, as in the present instance, to enforce a sharp penalty and that the process of reaping a harvest from the simplicity of one's neighbours is attended with dangers of miscarriage which must materially diminish its attractiveness in the eyes of those people who supply the popular demand for quack medicines.

CHOLERA IN KASHMIR.

CHOLERA, which existed in several parts of the Punjab during April, was imported into Kashmir along 200 miles of hill road by the men engaged to transport grain to Gilgit, on the frontier. It began in the city of Srinagar in the beginning of May and increased with such rapidity that within fourteen days the deaths per diem from cholera rose from 5 to 50 and then to 150; during the next fortnight the mortality steadily increased till the daily average was 270, even mounting to 300. At the date of our last advices it was slowly decreasing. About 350 new cases were being daily reported, with 140 to 150 deaths. Nearly every part of the city has thus been literally decimated. Within a month 4500 deaths have been registered. The disease is now spreading into the villages, but in a less virulent form. Several European visitors have been attacked and 6 have died. The State Medical Department has exerted itself to the utmost under Dr. A. Mitra in dealing with the cases. Dr. Thomas of the Mission Hospital is dangerously ill at present. He had been much overworked in the house-to-house visitation of the sick. There was a severe epidemic in 1888, when 10,000 patients died. So long as Srinagar remains perhaps the dirtiest city in the world such outbreaks are to be expected. The lesson to be learnt is that sanitation is less costly than epidemics. It is to be hoped that the British officials who are the responsible advisers of the Maharajah will take this lesson to heart. The

Government of India is responsible for the very expensive frontier policy of Kashmir. But for this large sums of money now spent on the army would be available for works of public utility, such as roads, drainage and a pure water-supply, all of which are now conspicuous by their absence. Surgeon-Colonel Harvey has gone to Kashmir to investigate the question of sanitary reform. It is to be hoped that the Indian Government will see to the resolute carrying out of his suggestions.

BROMIDE OF ETHYL AS AN ANÆSTHETIC.

BROMIDE of ethyl has been somewhat extensively employed in Vienna for anæsthetic purposes. In Professor Billroth's clinic it was used 300 times without mishap. Death, however, subsequently occurred in the case of an out-patient who was about to have a very large boil on the arm incised. While anæsthesia was being induced in the usual way the man suddenly became cyanotic and the respiration and cardiac movements ceased. Artificial respiration was persevered with for an hour and a half, but was of no avail. At the post-mortem examination there were found adhesions in both lungs; the heart was fatty and easily torn. The microscope showed that there was fatty and parenchymatous degeneration of the liver and kidneys as well as of the heart. There was no hyperæmic condition of the brain as in death under chloroform. It would seem, therefore, that whatever anæsthetic had been employed the patient might have died; so that no serious degree of blame can be attached to the bromide of ethyl.

MR. WATTS' GIFT TO THE NATION.

MEMBERS of our profession will be interested in learning that Mr. Watts, the eminent painter who intends to present to the nation a collection of his works, is now engaged on the picture which is to complete that collection. A short time ago he required medical advice and a well-known consultant was called to see him. The latter diagnosed his patient's case, prescribed for his relief and after some conversation was about to leave the room. Mr. Watts leant forward in his bed and said to the consultant, "Stay a moment—I should like a word with you. I have almost completed the collection of pictures which, as you are aware, I am about to present to the nation. There is but one picture wanting to complete the collection. I have had that picture in my mind for a long time, but I have not had the opportunity of seeing the subject of it until to-day. I want to paint you and when I have done so the collection for the nation will be complete." The gentleman addressed expressed his appreciation of the honour and we have no doubt that the profession generally will concur in this appreciation, seeing that the consultant in question is so representative a member of the body medical as the President of the Royal College of Physicians—Sir Andrew Clark.

THE WATER-SUPPLY OF CROMER.

THE Cromer Waterworks Company, in view of the growing popularity of the town, have been engaged during the past two years in sinking a second well capable of giving a supply considerably in excess of that hitherto available. These wells are situated more than half a mile away from the town. Owing to the sandy character of the upper strata great difficulty was experienced in sinking the new well, which varies from 8 ft. to 5 ft. in diameter, and has been carried to a depth of 183 ft. from the surface. The chalk was reached at a depth of 138 ft. below the surface, and, with the object of ensuring the purity of the supply by excluding all percolations from the strata above, the well has been lined to a depth of 151 ft. with brickwork and iron cylinders. The new borehole, which is 20 in. in diameter, extends from the bottom of the well for a further depth of 40 ft. Two headings, each 6 ft. by 4 ft., have been driven a distance of 100 ft., one serving as a connecting link between the new well and the old borehole by means of which the town has hitherto been supplied. The permanent water-level in the new well and the old borehole is 110 ft. from the surface and, as already stated, all the water flows directly from the chalk. The well, with the headings, possesses a storage capacity of about 25,000 gallons and the total yield when the works are in full operation will be at least 200,000 gallons a day, a supply that will suffice for the requirement of the town for many years to come, even at the present rate of progress. A new set of pumps and engine has been erected, which is designed to lift 12,000 gallons per hour, and the entire system is now in duplicate, so that in the event of a breakdown—an eventuality by no means likely to happen—a failure in the supply will, practically speaking, be an absolute impossibility. The water has recently been examined by Professor Frankland, F.R.S., and he reports on samples taken from each well as follows: "The two samples are of most excellent quality for dietetic purposes. They are absolutely free from all evidence of previous sewage or animal contamination, whilst for chalk water they are of very moderate hardness. Cromer may be congratulated on being supplied with one of the best waters in Great Britain." The works have been carried out under the direction of Mr. J. C. Melliss, M. Inst, C.E., of London, and by Messrs. Thomas Tilley and Sons of Walbrook, London. The pumps and machinery have been supplied by Messrs. Robert Warner and Sons of Walton-on-the-Naze, while the buildings at the surface have been erected by Mr. John Newman of Cromer.

FORCIBLE REMOVAL TO INFECTIOUS HOSPITALS.

THE case which recently occurred at Fulham and in which a patient was ordered by the magistrate to be removed to the fever hospital on the certificate of Mr. Cooney and against the opinions of Dr. Cayley, Dr. Phillips and others, is likely to be an important one in the history of sanitary legislation. Lord Sandhurst speaks on this subject with much authority, being chairman of the Middlesex Hospital and having been chairman of the Select Committee on Metropolitan Hospitals. Lord Sandhurst has called attention to the facts in the House of Lords, as reported at length in last week's issue of THE LANCET, and in the course of his remarks said that the board of the charity (the Middlesex Hospital) had promptly taken the case into consideration and passed a vote of confidence in Dr. Cayley. His lordship also quoted Sir Andrew Clark as to Dr. Cayley's standing in the College of Physicians and his high authority on such a question as the diagnosis of fevers. Lord de Ramsey, replying on behalf of the Government, said the case was one calling for the supreme control of the Home Office, by which it is understood an inquiry will be made into all the facts of the case. At Fulham a crowded public meeting has been held to express sympathy with the mother of the patient. Resolutions were passed tendering thanks to Dr. Cayley and Dr. Phillips and requesting the Local Government Board to cause a public inquiry to be made into the case, also asking whether the magistrate's interpretation of the Public Health Act does not place far too much power in the hands of medical officers and medical men in general and whether there is not urgent necessity for an amendment of the law as regards the notification of infectious diseases. The fine of £10 and costs was remitted by the Home Secretary after Lord Sandhurst had made him acquainted with the facts of the case. Though the facts of this case raise questions rather as to the judgment with which the law has been administered than as to the law itself, yet it is well worthy of consideration whether some greater security for sound diagnosis in doubtful cases must not be provided than the certificate of any one practitioner would imply. Indi-

vidual and domestic liberty are sacred things. But the public safety is still more so. The important thing in every serious invasion of private and domestic liberty is to eliminate as far as possible the element of fallibility and to give the poor, who are mostly affected, the same security as the rich. It is only by these means that popular respect for such legislation can be maintained.

THE ORGANISATION OF SCIENCE.

WE have received a disclaimer from "A Free Lance" with regard to our criticism of his "Organisation of Science."[1] He is willing that the Linnean Society, whose carnivorous tendency, though contrary to the law of specialism, he appeared to sanction, should deliver up its fauna to its junior, the Zoological Society. His only wish is to further by special concentration of energy the fullest consideration of scientific problems. He also repudiates all intention of limiting by centralisation the vigour of intellectual enterprise. Nothing, therefore, could be more admirable than his purpose. While we gladly admit this however, we must express the opinion that it is one of the most objectionable, as well as most marked and essential, features of specialism, notwithstanding the nice accuracy of its accomplishments, that it tends to a progressive narrowing of the scope of the intellect and a restraint of its free energy, which has often proved fully adequate to the work of investigation in diverse lines of study. Neither would we forget that the very plan of natural subdivision seems to repudiate anything like pure specialism, since every individual department merges within the dim confines of some other.

THE DEATH OF THE PREMIER OF BRITISH COLUMBIA.

IN reference to the inquest held on the body of Mr. John Robson, Premier of British Columbia, on the 4th inst., the following particulars of the illness have been furnished at our request by Dr. George Ogilvie. Mr. Robson was sixty-eight years of age and had been suffering from overwork for some time. He came to London on business on June 20th and on that day, when riding in a hansom cab, the tip of the little finger of the right hand was crushed in the hinge of the door. The injured finger was at once dressed at Westminster Hospital and Mr. Robson was able afterwards to keep his appointment at the Treasury Office. The dressing was changed next day at the hospital. He did not again visit the hospital and did not obtain any further advice till he was seen by Dr. Ogilvie on the night of June 26th—i.e., six days after the accident. There had been a rigor on June 23rd, which Mr. Robson attributed to ague, and he did not attach much importance to it, although he felt ill. The following days he suffered from slight nausea and malaise. When first seen by Dr. Ogilvie he had the aspect of a patient suffering from a continued fever. The skin was moist, the complexion sallow, the tongue was glazed and the lips parched. The pulse was weak and irregular; respiration 28, temperature 102°. The physical examination of the thorax and abdomen disclosed nothing which could account for the symptoms. The dressing, which had a faint odour of iodoform, was removed from the finger. The finger nail was loose, the skin covering the tip of the finger was of a dirty-grey colour, and there had been fracture of the tip of the terminal phalanx. An opiate was administered and the patient passed a fair night. Next day the temperature rose to 104°, and Mr. Watson Cheyne was called in consultation. The finger was amputated the same evening. The temperature fell two degrees after the operation, but next day again rose to 104°. The pulse became rapid and intermittent, the respiration was shallow and more frequent, the breath had a peculiar sweet odour, and the tongue became dry and furred. Later on the temperature fell to 100° and, coma gradually supervening, the patient died on the evening of June 29th—namely nine days after the accident. No post-mortem examination was ordered by the coroner and the family did not desire one to be made.

[1] THE LANCET, June 18th.

DEATH OF PROFESSOR BIERMER.

THE death is announced of Professor Anton Biermer, who until quite recently was Director of the Medical Clinic in Breslau. He had occupied himself with microscopic investigations, especially of the sputum, and he published papers on the metallic sound in auscultation of the lungs. Previously to his going to Breslau as successor to Lebert he had been Professor of Medicine in Berne.

DONATION BOXES IN OUT-PATIENT ROOMS.

WE should be glad to hear from many quarters as to the voluntary contributions of out-patients. At the anniversary court of the governors of the East Suffolk and Ipswich Hospital it transpired that the donation boxes in the out-patient rooms had been very ill supported, only 1*s.* 7*d.* being given by 4278 patients. There was a falling off, too, in the Sunday collections.

CHRONIC NITRO-BENZOL POISONING.

DR. WARFINGE of Stockholm has reported some cases of chronic poisoning by nitro-benzol occurring amongst workmen employed in a factory where this substance is used and where the workshops are small and badly ventilated. In one case which was treated at the Sabbatsberg Hospital there was severe headache during the first week, followed by lassitude and general debility with fatigue after walking. After some time retching and vomiting with great loss of appetite came on and the bowels became confined, the stools having a reddish-brown appearance. The urine, too, was reddish brown and of a syrupy consistence. There was depression and restlessness at night and subsequently a feeling of formication in the fingers and toes, which rapidly spread to the hands and legs. A blowing sensation was complained of in the feet, which appeared to affect the whole of the body. The headache became more severe and was accompanied by giddiness and impairment of vision with tinnitus in the ears. After this there were tremor in the upper extremities and impaired sensation in the upper and lower limbs with, for two days, impairment of the power of speech. The patient, after three months in the hospital, recovered sufficiently to enable him to resume his work in the factory, but after having been there for four months he was obliged to apply for readmission to the hospital, with somewhat similar symptoms to those existing previously. He presented much the appearance of a person with locomotor ataxy, but, after a month's treatment, recovered.

FOREIGN UNIVERSITY INTELLIGENCE.

Berlin.—An Extraordinary Professorship in the Philosophical Faculty has been conferred on Dr. Assmann, an eminent meteorologist, who was at one time a medical practitioner.

Buda-Pesth.—For the vacancy in the surgical chair caused by the death of Dr. Lumniczer the Professorial Senate have proposed the following names: *Primo loco*, Professor Dollinger and Professor Réczey; *secondo loco*, Professor Navratil; *tertio loco*, Dr. Hugo Schmidt of Pressburg.

Greifswald.—Dr. Stöwer has been recognised as *privat-docent* in Ophthalmology.

Heidelberg.—Dr. Fleiner, assistant in the Medical Clinic, has received an offer of a Professorship at Innsbrück.

Prague (Bohemian University).—An Ear and Throat Clinic

has been established of which Professor Emilian Kaufmann has been asked to take charge.

Würzburg.—Dr. Rudolf Arnim Fick has been recognised as *privat-docent* in Anatomy.

AT the tercentenary celebration of the Dublin University on Wednesday last the honorary degree of Doctor of Medicine was conferred upon John Shaw Billings, Washington; Thomas Bryant, President R.C.S.; Sir Andrew Clark, President R.C.P.; Adolf Gusserow, Berlin; Jonathan Hutchinson, London; and Thomas Grainger Stewart, Edinburgh. The degree of Doctor of Sciences was conferred on J. Burdon Sanderson, Oxford; Michael Foster, Cambridge; Sir George Murray Humphry, Cambridge; Julius Kollmann, Basel; Alexander Macalister, Cambridge; Professor Richet, Paris; Sir William Turner, Edinburgh; Wilhelm Waldeyer, Berlin; and others.

THE Italian Society of Laryngology, Otology and Rhinology will meet for the first time in Rome towards the end of October next. Among the agenda the following may be noted:—1. Report by Professor F. Massai of Naples on the Phases, Nature and Therapeutics of Laryngeal "Papillomi." 2. The Diagnostic Value of the Perception of Sounds "per la Via Craniense ed Aerea" (cranial and respiratory) in Maladies of the Ear. Reported by Dr. Corrado Corradi of Verona. 3. Diagnosis and Treatment of Affections of the Sinuses annexed to the Nasal Cavities. Dr. Giuseppe Strazza of Genoa, reporter.

THE Khedive of Egypt has conferred upon His Excellency Crookshank Pasha, F.R.C.S. Edin., the Second Class of the Imperial Order of the Medjidieh in recognition of the valuable services rendered by him as Director-General of Prisons. The brevet and insignia of the Order were presented to Crookshank Pasha on the 21st ult. by His Excellency Ahmet Choucry Pasha, Under Secretary of State, and, at present, Acting Minister for the Interior, together with a letter from His Highness the Khedive.

A COMMITTEE MEETING in support of the "Sir George Buchanan Presentation Fund" was held on Thursday, July 7th, at 5.15 P.M., at 13, Old Burlington-street. Subscribers are reminded of the desirability of their sending in their subscriptions as soon as possible, in order that the committee may know at an early date the amount of the fund which will be at their disposal. Dr. W. H. Hamer and Dr. J. C. Thresh are the honorary secretaries.

THE medical profession all over the world will learn with profound regret that Professor R. Koch of Berlin, whose researches have so greatly advanced our knowledge of disease, has of late been incapacitated from work and that there is grave reason to fear that the condition of his health is such as to preclude the resumption of his duties for some time at least.

THE Rose Show and Floral Fête which was held at the Mansion House on June 24th and opened by the Princess Christian, accompanied by her daughter, Princess Victoria, was organised by the Lady Mayoress for the benefit of the Royal Hospital for Women and Children in Waterloo-bridge-road. After all expenses were paid the Lady Mayoress was able to present to the hospital the sum of £1050.

THE summer dinner of the Irish Medical Schools and Graduates' Association took place on the 4th inst. at Kingstown, Dublin, Dr. Mapother presiding and fifty-one members and guests being present.

THE University of Siena, by eighteen votes of its Senatus Academicus out of twenty-one, has just elected Professor Domenico Barduzzi as its rector. Dr. Barduzzi is one of the most distinguished among its clinical staff and takes an effective part in promoting the balneological resources of Italy.

THE chair of General Clinical Medicine in the Istituto di Studi Superiori at Florence, left vacant by the death of Professor Federici, has by the unanimous vote of the medico-chirurgical faculty of the Institute, been offered to Professor Grocco of Pisa, a clinical teacher and consultant of high reputation in the latter seat of learning.

LORD REAY presided on Monday at a special meeting of the Royal Commission to consider the granting of a charter to the Gresham University for the purpose of hearing the opinions of M. Couvereur, a Belgian professor, who explained the methods of University education in that country.

MR. GEORGE JOHNSON, M.D., Physician Extraordinary to the Queen, and Mr. Frederic Bateman, M.D., Senior Physician to the Norfolk and Norwich Hospital, were introduced to the Queen's presence on July 5th and received the honour of knighthood.

THE annual competition for the Volunteer Medical Association Ambulance Challenge Shie will take place at Wellington Barracks on Saturday, the 16th inst., at 5 o'clock. Those interested in the competition are invited to attend.

AT the request of a number of his former students, Professor Grainger Stewart of Edinburgh has consented to sit for his portrait, which is to be painted by Sir George Reid, P.R.S.A.

CHOLERA NOSTRAS AND THE PARIS WATER-SUPPLY.

(FROM OUR SPECIAL CORRESPONDENT.)

THOUGH prominent Government officials may consider it their duty to maintain that everything is for the best in the best of all possible worlds there is no denying that the epidemic in the suburbs of Paris is a matter of grave anxiety. We are asked to believe that there is no cholera; but to the numerous persons who have died after an illness of only a few hours it matters little whether the cause of their deaths was cholera nostras or Asiatic cholera. We are told, on the best authority, that already some hundred and fifty persons have died. To them, at least, the consequences were equally sudden and disastrous. The dejections of the patients have been examined; an official report was to be published as to the result. This report has not yet appeared. Why has it been held back? Because, we are told, the investigation is delicate and difficult. But some ten days ago I ascertained from private sources that the bacillus of cholera had been found in these dejections; only I was further informed that such germs were always found in cases of cholera nostras. To distinguish them from the true Asiatic cholera germ it was necessary to cultivate the germ and produce successive generations. This has been done, and as nothing is published on the subject it may be concluded that probably the result is not encouraging. Indeed, rumours are already circulating that new theories will soon be afloat as to the etiology of cholera which may tend to show that there is not so much difference as is generally supposed between cholera nostras and true cholera.

The epidemic commenced last April at the prison and asylum of Nanterre, which was originally built to hold 2000 inmates. In practice it has become not merely a prison but a sort of asylum for vagabonds and has contained sometimes as many as 5000 persons; consequently there have been all the evils of

overcrowding. Precautions were taken to supply the inmates with pure water. A very deep well was dug into the chalk and was surrounded with steel tubing, so that no surface water could reach and contaminate the well. Some Seine water, however, is also provided at the prison where it is used for working hydraulic lifts. By some mistake or mismanagement the Seine water, instead of the well water, had been distributed for drinking purposes. The epidemic among the prisoners thereupon broke out, with the result, according to M. Monod, who is the Director of the Public Hygiene Department of the Ministry of the Interior, that some fifty cases of a suspicious description ensued causing forty deaths. From the prison the epidemic spread to the neighbouring suburbs, and soon there were twenty-five deaths to deplore among inhabitants living near the Nanterre prison. The well water provided at the prison contained only 0·0015 gr. of organic matter and the Seine water 0·0018 gr., but Dr. Miquel found in the latter 37,000 bacteria to the cubic centimetre.

The epidemic has spread much further afield, but it still seems connected with the drinking of Seine water. Thus at Argenteuil seventeen cases occurred at the commencement of June, when the water of the Seine was substituted for the water of the Oise. The Consultative Committee of Hygiene of France has passed a resolution demanding that the water companies should not be allowed to deliver Seine water to their subscribers without giving them due warning. This is actually done, but perhaps not efficaciously. The position of the Paris water-supply is as follows. In ordinary times 135,000 cubic metres of water are consumed in the day; but when the temperature rises to about 70° F. there is an increased consumption of water equal to about 30,000 to 40,000 cubic metres more. The water works are then obliged to make up the difference by giving Seine water. Nor is it practical to purify efficaciously so great a volume of water. No sterilising apparatus could deal with such a quantity. Moreover, it is not possible to ration the supply, for while the supply was stopped the pipes would get filled with air, and this is attended with many inconveniences and dangers; and, on the other hand, there would be no water to flush the closets. The best hope of the Parisians rests on the fact that 87 kilometres out of the 102 kilometres of the aqueduct, which will bring the water of the Vigne to Paris, are now constructed. Perhaps this additional supply of pure water will be available next summer; in the meanwhile, the inhabitants are asked to carefully boil their water and to wait patiently. As a temporary measure it has been decided to apply the Pasteur filter to the Wallace drinking fountains, so that prudent persons may go to these fountains and fetch their supply of drinking water. But the number of prudent and thoughtful persons is very limited, so the epidemic continues. Also the waters of the Vigne will only reinforce the Paris supply; the suburbs, where the epidemic most generally prevails, will continue to drink the Seine water. M. Sellier, for instance, who is mayor of Colombes, writes to complain that the treaty with the water company supplying his district is binding for another thirty-five years. There is no clause in the treaty giving the concession for the water-supply which enforces the filtration of the water. These treaties are already some twenty-five years old, and twenty-five years ago the dangers of an impure water-supply were not understood as they are in these modern days of bacteriological science. The districts of Bois-de-Colombes, of Asnières, Courbevoie, Puteaux, Nanterre, Suresnes, Gennevilliers are all in the same predicament. What will be done under these circumstances no one can yet foresee. The companies are legally entitled to supply water which is said to be dangerous to drink for another thirty-five years.

Since writing the above I have been informed on the best authority that the publication of the official report on the epidemic has been suppressed by order of the Prefect of the Seine. This report was drawn up by Dr. Proust, who was one of the representatives of the French Government at the Venice Sanitary Conference. The Consultative Council of Hygiene met at the Ministry of the Interior and heard and adopted this report. It was printed, Dr. Proust corrected the proofs, and it was about to appear in the columns of the *Official Journal* when M. Pourbelle, the Prefect of the Seine, interfered and prevented its publication. He feared that the report would create a disastrous panic. What his arguments may have been can be gathered from the incident which occurred a few days ago at a meeting of the County Council (Conseil Général) of the Department of the Seine. M. Vaillant attempted to speak about the epidemic, but was most violently interrupted by the councillors who represented some of the districts affected. Finally, M. Pourbelle rose and exclaimed that he could not understand the fanaticism of sanitary reformers which led them to make speeches that would tend to reduce the value of house rent in the suburbs of Paris. Then, to counteract the influence of the few words that M. Vaillant had been able to utter, the Prefect of the Seine declared that there was only one commune contaminated. Many leading sanitary reformers are indignant at the attitude adopted by the Prefect of the Seine. It is a good illustration of the difficulties in the way of sanitary reformers. Besides, anyone who has studied the death-rate knows full well that it is not in only one commune, but in twenty-four communes or districts, that cases of a suspicious and dangerous character have occurred. Many of these communes are agreeable semi-rural districts outside Paris, where Parisians who cannot altogether absent themselves from town take lodgings during the summer months. If M. Pourbelle had his own way people would be allowed to leave Paris, where, as a rule, pure spring water is obtainable, so as to dwell in suburban districts where nothing but Seine water is available, and this just at a moment when it seems very evident the Seine water is more contaminated than usual. Paris is wealthy enough and has sufficient resources within itself to bear the loss of a few visitors who might be scared away by the publication of Dr. Proust's report; while its leading position as the first town in France imposes upon it the duty of setting a good example. The evil should be met openly, face to face; everyone should know the truth and then it should be possible to take the proper precautions. Secrecy would be bad policy were it possible, but in Paris it is impossible. The Prefect of the Seine cannot, for instance, prevent the papers relating that Madame Vitté, the wife of a porter of a manure factory in the Rue de la Haie Coq died suddenly on July 3rd after only a few hours' illness; that on the same day, and also at Aubervilliers, Alfred Duval died suddenly and that there were other cases of a suspicious description at the Quatre Chemins; that at Courneuve Madame Chevalier and M. Boulogne, both living in the Rue d'Aubervilliers, died in the same manner; that at St. Denis, at the Avenue de la Plaine, there were other cases within the last day or two. Finally, yesterday, within Paris itself, in the Rue Oberkampf, a case is recorded. A special meeting of the municipal council of Clichy has been held to deal with the question. There is no disguising the existence of the epidemic, the great extent of the area it covers and the suddenness of the deaths it occasions. By suppressing the report of the Consultative Council of Hygiene more mischief and a greater panic will result than could ever have ensued from its publication. There is no attempt made in London to conceal the gravity of the present scarlet fever epidemic; and Paris shows itself behind the age in resorting to the feeble stratagem of secrecy. I do not believe that any prominent French medical man or sanitary reformer approves of this ostrich-like policy.

Paris, July 5th.

SOCIETY FOR THE STUDY OF INEBRIETY.

"Cures" for Inebriety.

THE quarterly meeting of the Society for the Study of Inebriety was held on Tuesday afternoon at the rooms of the British Medical Society, 11, Chandos-street, Cavendish-square, W. Dr. Norman Kerr presided.

The PRESIDENT said that hitherto temperance reformers in this country had usually worked by straightforward and intelligent methods and had exercised that most valuable quality in reformers and everybody else—patience; and, as the magnificent results of the great temperance movement showed, a very large number of drunkards had been rescued, reformed or cured. But human nature was very impatient, and in these latter days there had arisen a feeling amongst a great many people that the evil of intemperance was growing so rapidly and extending so widely, and that the consequences in the present day and to posterity were so tremendous, that they must find some short cut to temperance, some miraculous method of speedily reaching the goal which neither they nor anybody else understood. Mesmerism and hypnotism were straightforward and open remedies for drunkenness and if applied in the presence of medical men and witnesses they could not be called secret remedies. He wished, however,

specially to refer—as circumstances had arisen to render this very necessary—to a so-called secret "cure" which was named the "double chloride of gold cure" to which allusion had already been made in THE LANCET and other medical journals, and to advocate the merits of which a meeting was convened to be held under the auspices of the Church of England Temperance Society, presided over by Bishop Barry; but, owing to his (Dr. Kerr's) representations to the Bishop of London and Bishop Barry, that meeting had been adjourned *sine die*. The real but unavowed object of that meeting was to float a syndicate to raise £150,000 in this country in order to purchase the right of using this so-called "cure" in England; £110,000 of this—according to the circular he had seen—was to be given in cash and £40,000 in shares to the vendors. There was to be a commercial company for pushing the golden remedy similar to other companies with which they were familiar. They were told in a pamphlet that "without any effort on the patient's part" a cure would be effected by the use of this wonderful and infallible remedy as "certainly as night followed day." Already the decoction had apparently proved, if not a golden remedy, at least a veritable gold mine, for the bottles which contained it (one of which the chairman produced) were sold in pairs and each pair cost 9 dols., or 36*s*. There were twenty-six branches in America for the sale of this "cure." If the remedy were really a remedy for the victims of intemperance, surely it would have the support of the leading temperance reformers in America; but this, Dr. Kerr showed, was not the case. One writer in the *North American Review*, who had lauded this so-called cure, which he had tried, died in New York, a few months after the appearance of his article, the death of a pauper drunkard. The fact was that this falsely called "remedy" was very dangerous, and was compounded of a number of poisonous intoxicants. They would hear from Dr. Usher of Melbourne, who had been to Dwight, Illinois—the centre of the manufacture of the "cure"—what he thought of it and its effects. Dr. Usher, the chairman incidentally mentioned, was about to publish a new book on "Alcohol and its Treatment." A distinguished analyst, a member of a great medical corporation in England—whose name the chairman was not at liberty to mention—had made a careful analysis of the so-called "bichloride gold cure." The dictum of this gentleman on a subject of this kind would, were he (Dr. Kerr) at liberty to name him, be received by all competent authorities without any hesitation whatever. Well, he (the analyst) found neither gold nor chlorides, but what he did find present was: water, 61·31 per cent.; sugar, 6 per cent.; a small quantity of mineral salts, principally lime, probably from herbs; and 27·55 per cent. of pure alcohol as intoxicating as port or sherry and more intoxicating than champagne and claret. And yet old teetotallers, unconscious of the composition of the "gold cure," had been actually recommending a so-called "remedy" more intoxicating than champagne or claret. Not only was this compound preparation condemned by the whole medical press of America and Britain, but by the whole reputable and respectable medical profession of the United States. Having spent many years in America he could bear this testimony to the fact that although there was not there as here a system of registration, yet there were as honourable members of the medical profession in America as in Britain. The testimony of Dr. C. H. Merr in an American journal as to the "results" of Dr. Keeley's treatment showed that Colonel Mines a few weeks after his "cure" died of alcoholism; Senator Fair's son died of heart disease directly attributed to the treatment; Walter R. Earle died a raving maniac a week after his dismissal; Henry Anstey died during treatment; Dr. Miller of Illinois, Luther Benson and Charles Vaughan became insane; ex-Congressman Hopkins also went mad and died soon after treatment. This so-called "remedy" was opposed to the whole true principle of enduring temperance reformation. The first thing to do with the drunkard was to cut off the poison, to stop the supply at once. Teetotalism was essential to the effectual cure of the drunkard. What, after all, was inebriety? It was a complex disease and needed moral, mental and physical treatment. An inebriate to be cured must hinself have a desire to be cured, and must exercise a certain amount of will power when the narcotic action of the drugs had been swept away from the brain by the exclusion and prohibition of alcohol, then the little will power left would reassert itself.

Dr. J. E. USHER of Melbourne, Australia, then described a visit he had made to Dr. Keeley's sanatorium at Dwight. He was, he said, the first British physician who had visited Dr. Keeley's place. Three leading physicians from Boston, New York and Philadelphia respectively—representing different societies—had preceded him, remained half a day or a few hours and then returned home. Six weeks later all their friends received circulars intimating that these gentlemen had been remarkable successes in the cure way. Although he had visited the place with credentials from the Government, the Cabinet and lay press of Australia, he had been traduced since he left Dwight. Dr. Keeley (who seemed very uneasy while he conversed with him) told him he had used the "remedy" twelve years and it was very successful. He asked him what was the *rationale* of his treatment; what prescriptions he used. Dr. Keeley replied: "We will not go into that. I know it is all right. If you want to know anything about it, the secretary or chemist will tell you." The "chemist" turned out to be a sort of page-boy to Dr. Keeley. He (Dr. Usher) was introduced to Dr. Blaine, the "chief of the staff." The staff consisted of unsuccessful practitioners, who were paid from 3000 dols. to 7000 dols. a year, and they did all the work. Dr. Blaine took him where three rows of men were being injected in the left arm with five drops out of a little porcelain bowel containing a pinkish material—atropine really. Four of the patients wore glasses, and they told him that they could not see three or four days after the treatment, and became blind weeks together. Seventy per cent. of the patients had glasses. They suffered too from giddiness. One patient had been at the institution nine weeks, he said, and was afraid to leave because three of his "pals" who had left ten days before got drunk and had to come back. Another patient remained because he said if he stayed there two or three months an aunt had promised him an annuity, and he "wanted to see the time out." There was a "Bichloride of Gold Club" in which there were "graduates" and "undergraduates," so called. They did not appear to be healthy; some of them seemed to be under the influence of an opium drug—atropine. About £40,000 a year was spent in advertising or in subsidising people to advertise the concern, which was now engineered by some of the "smartest" men in America. The thing was most lucrative. Two bottles of the preparation cost 36*s*. Every man who went to Dwight had to pay 25 dols. down and from 5 dols. to 25 dols. a week; and all this money flowed into the coffers of the company.

The PRESIDENT said he had invited Dr. Keeley to attend that meeting, but he replied that he had that evening to deliver a lecture at St. James's Hall on "Drunkenness and its Cure," adding that he would be happy should any members of that Society desire to hear his address to forward tickets.

Dr. MORTON (Kilburn) moved: "That this meeting of the Society for the Study of Inebriety (of which the members are registered British medical practitioners) is of opinion that any so-called 'cures' for inebriety the composition of which is not disclosed are unfit to be commended by honourable members of the medical profession, who are bound to place the full details of their treatment before their professional colleagues, a requirement as essential in the interest of the public as it is consonant with the disinterested practice of scientific therapeutics."

Mr. J. SMITH, late superintendent of the Dalrymple Home, seconded the motion, which was carried unanimously.

Surgeon-Major PRINGLE moved, and Mr. JABEZ HOGG seconded: "That this meeting, having been informed by a competent London analyst, who has made a special analysis, that the alleged 'bichloride of gold cure' shows no trace of gold or of chlorides and contains 27·55 per cent. of alcohol, condemns unreservedly the prescription of such an intoxicating preparation to an inebriate."

This too was carried unanimously.

Dr. F. R. LEES moved a vote of thanks to Dr. KERR and thanked that gentleman for the prompt and effectual part he had taken in the exposure of this so-called "cure" of inebriety.

Mr. J. HILTON (United Kingdom Alliance) seconded the motion, which was carried *nem. con.*, and the meeting then terminated.

THE baths of University College Hospital are open between the hours of 2 and 5 P.M. and of 6 and 8 P.M. to patients under the advice of their medical practitioners. Wednesdays will be set apart for female and Thursdays for male patients.

DUBLIN UNIVERSITY TERCENTENARY.

THE week has been a gala one in Dublin and garden parties, concerts, balls and receptions have filled up every available period. The first stone of the historic edifice of Trinity College was laid in 1591, in Queen Elizabeth's reign. Early in 1593 the institution was opened for the reception of students and the first conferring of degrees took place in 1600. The mayor and citizens granted the site of the Abbey of Allhallows and twenty-eight acres of derelict land, which latter now brings in an annual income of several thousand pounds. Her Majesty Queen Elizabeth gave some Crown rents and a yearly grant of £400 from the Concordatum Fund, which latter ceased in the present century, and the former is worth about £5 yearly. Lord Burleigh was appointed first Chancellor and Archbishop Adam Loftus the first Provost.

The proceedings of the tercentenary celebration commenced on Tuesday, the 5th inst., at the Examination Hall by a reception by the Provost, who welcomed the various guests and delegates. At 11 A.M. a procession was formed in front of the library and museum buildings. A military band led, followed by the students in gowns and caps, then the guests and delegates, including representatives of universities in their robes and of scientific societies. Next the foreign guests and delegates, followed by representatives from Cambridge and Oxford Universities; then three members of the Dublin Corporation, graduates and honorary graduates of the University, professors, junior and senior Fellows, another band terminating the procession. As the guests and delegates passed out of the College gates they were presented with buttonhole bouquets by young girls dressed in fancy costume The procession passed through various streets, walking four abreast until they reached St. Patrick's Cathedral, where a commemoration service was to be held. A procession of the kind was never seen before in Dublin and attracted immense crowds. The bright colours of the graduates' gowns and the quaint costume of the foreign guests with robes of yellow, orange, fawn, crimson and other shades presented an imposing appearance, and the headgear of some of the guests was of the strangest character. Some of the continental guests were in full evening dress with crosses and orders but without robes, while others wore gowns over military uniforms. One stalwart German, a Heidelberg student, walking with drawn sword, created considerable interest, and many surmises were expressed as to what he represented. Some thought that because he wore high boots and a velvet cap with an immense ostrich feather he belonged to the Order of Foresters. An old gentleman in an immense ruff reminded us of the mediæval period. When the procession had reached the Cathedral and had taken their places the scene was magnificent and unique. The State pew was occupied by the Lord Lieutenant, who wore the collar and star of the Order of St. Patrick. There were eight bishops present, the Archbishop of Dublin and the Lord Primate. The choir moved in procession up the centre aisle to the chancel singing the hymn "All People that on Earth do Dwell," and the choir and clergy being seated the hymn "O God our Help in Ages Past" was sung. The Archbishop of Dublin read the lesson and the Dean of St. Patrick's preached, the anthem being Blow's "I Beheld and Lo."

At three o'clock the cricket match, Dublin University *v.* Cambridge University, attracted a good many to the College Park, where a three days' match was being held; and at four o'clock there was a garden party in the Fellows' Garden, Trinity College, where about 2000 people enjoyed themselves for upwards of two hours, among the notabilities being his Excellency the Lord-Lieutenant, Viscount Wolseley, Lord Rosse, Chancellor of the University, Earl Dufferin, Chancellor of the Royal University, &c. To inaugurate the occasion a mulberry tree was planted by Miss Salmon, the Provost's daughter, a sapphic ode by Professor Tyrrell being sung of which the following is a translation:—

> "Thee did a kindly hand long stilled in death
> Plant here to reach an old age green and hale,
> Years full three hundred now have passed, but thou
> Survivest all their tale.
>
> "To thwart Death's envy of thy long-lived race
> A maiden doth a youthful sister give,
> Bidding her with thy dusky leaves to twine
> Her kindred leaves and live.
>
> "Mayest thou, new Tree, in dark-green mantle clad,
> No less accomplished scions here survey
> From age to age than those thy sister saw
> Crowned with renown for aye."

In the evening the Fellows professors, and students entertained at dinner several distinguished graduates, including Mr. Alma Tadema, Professor Sayce, Professor Waldeyer, Professsor Hashagen, Professor Gusserow, Sir G. Humphry. On behalf of the guests, Professor Schiffer of Vienna, Professor Knapp, Professor Oort of Leyden and Professor Cremona of Rome responded for the Universities.

At 9 P.M. there was a performance by the University Choral Society in the Leinster Hall of the Tercentenary Ode, composed by Sir Robert Stewart and written by Mr. G. F. Savage Armstrong. The ode was in every way worthy of the high reputation of the author and composer. The evening concluded by a reception at the Mansion House.

On Wednesday the 6th inst. the conferring of honorary degrees took place in the Examination Hall, Trinity College. All the recipients of the degrees were present, with only one exception. The proceedings were presided over by the University caput, consisting of the Earl of Rosse, chancellor; Rev. Dr. Salmon, provost; and Rev. J. Barlow, senior master, *non Regent*. Sir Robert Stewart performed a selection of music on the organ before the proceedings commenced. At 12 o'clock the procession of those who were to receive the honorary degrees and the College dignitaries entered the hall, the members of the caput being preceded by the College steward carrying the mace. At 3 P.M. there was a meeting in connexion with the graduates' memorial and at the same hour the cricket match between the Dublin and Cambridge Universities entered on its second day. At 3 P.M. there was a garden party at the Viceregal Lodge, in the Phœnix Park, the attendance being large and fashionable, while in the evening the tercentenary banquet was held in the Leinster Hall.

We must reserve an account of Thursday's and Friday's doings until next week.

ACTINOMYCOSIS.

AMONG the diseases of animals one of the most interesting is that due to the presence of the ray-fungus and consequently known as "Actinomycosis"; and as it is also a malady of mankind—though much less frequently observed—its interest is much enhanced, especially as it is in the majority of cases an incurable disorder. Its existence in the human species and also in animals may be more common than is usually supposed; for the presence of the fungus may be overlooked and the pathological changes it sets up may be ascribed to something else. Though for very many years the morbid conditions due to its action were recognised in animals, and chiefly in cattle, yet the discovery of the microphyte is only of recent occurrence and the numerous and diverse names given to these conditions are now merged into that which signifies their true nature. So far as animals are concerned, actinomycosis is a widespread and somewhat multiform disorder. It prevails throughout Europe and is common on the American continent and in Australasia. But in Europe its prevalence is singularly diversified; for while in some countries it is frequently seen—as in Bavaria, Saxony, Lombardy, Holland, Denmark and England,—in others—as France—it is comparatively rare. Even in this country its localisation appears to be strikingly partial; for while in Scotland and Ireland it appears to be exceedingly infrequent, in England it is not at all so, and in some parts—as Lincolnshire—it is of very common occurrence among cattle. It is equally curious to note that the form actinomycosis assumes is almost special in certain countries. In Germany, for instance, though actinomycosis of the pharynx is frequently observed and appears as pharyngeal polypi, lymphomata and lympho-sarcomata—soft tumours containing myriads of actinomyces nodules, and which interfere with deglutition and sometimes obstruct the respiration—yet according to reports actinomycotic glossitis (the *Holzzunge* or wooden tongue) is the most common form it assumes. It is the same in Holland and Italy; and though in these countries and Germany the bones of the jaws are sometimes the seat of actinomycotic tumours (the so-called "osteo-sarcoma" and "spina ventosa"), yet they are not nearly so often seen as in this country, the United States of America, or Australia; while in France, where actinomycosis appears to be almost non-existent, the glossitic form has been scarcely recognised, that of the jaws being almost the only one observed. In England the three forms are witnessed, but perhaps the pharyngeal region is that which is most frequently invaded, though the first instance

on record, that reported by Fleming, was one of actinomycotic glossitis. Of course, the disease may affect any organ or tissue and though the jaws, tongue and pharyngeal region are by far the most frequently involved, yet pulmonary and mammary actinomycosis are far from infrequent, and the microphyte has also been found in tumours on the skin and elsewhere, as in the omentum, kidneys, muscles, liver, spermatic cord, vertebræ, &c. The tumours vary considerably in size, being from that of a pea or hazel nut to the volume of the fist or a child's head, and they are irregular or nodulated on their surface; while in section they are rather light-coloured and granular, the granules being of a faint yellowish tint. Each tumour is in reality a kind of fibro-sarcoma studded and interspersed with tuberculiform nodules which are developed around tufts or masses of actinomycetes in different stages of development or regression. As has been remarked, each of these nodules exactly represents, histologically, a Köster follicle—that is, the central portion is more or less caseous and consists of multi-nucleated giant cells, voluminous epithelioid cells, with clusters of actinomycetes, some small groups of these being often made out in the interior of the giant cells; the whole being enclosed in a more or less thick layer or envelope of concentrically arranged fusiform cells, the periphery of which becomes gradually combined with the proper tissue of the tumour. After a certain but variable period these nodules become calcified, and the fungus cannot then be so readily distinguished without recourse to special treatment; but in discharges the minute yellow granules or nodules containing it can always be easily detected by placing a thin layer of the matter on a piece of glass or thin layer of cotton wool and holding it up to the light. With regard to the prevalence of actinomycosis in cattle in different countries, it is impossible to obtain reliable information. If rumour can be accepted, the United States of America has the largest proportion, and it has been imagined that about 5 per cent. of the bovines in England, Germany and Italy are its victims. In France only 95 cases have been noted among 130,000 animals, being 0·72 per 100, or one diseased ox in 1400; and it is seen chiefly in the Manceau and Normandy cattle, those of Brittany and Limousin being almost exempt, as they show only 1 in 10,000. It is to be remarked, however, that these figures only refer to living animals which exhibit the disease externally. Besides the bovine species, the pig is the only other domesticated animal frequently attacked, and it is somewhat curious that the ovine species appears to be endowed with almost complete immunity. Herbivorous and omnivorous animals—such as the ox, sheep, pig and man—have furnished most instances of it, the carnivora being apparently refractory, though one case is recorded as occurring in the dog. The mode in which infection takes place is not yet thoroughly established, but there can scarcely remain any doubt that it is effected by the introduction of the fungus or its sporules through a wounded or abraded surface; in the great majority of instances, in which the head is involved, the actinomycetes are introduced with the food, and possibly by means of grain, straw, or other kind of herbaceous aliment, and in the form in which the tongue is affected, and in which it runs its course most rapidly, the cases are those of animals grazing about harvest time. Piana records a case of lingual actinomycosis, in which the lesion was manifestly due to the penetration of a barley-seed barbule into a fistulous wound, as the barbule was covered with the actinomycetes when he examined it; and Jöhne has found numerous fungi on fragments of straw fixed between the pillars of the soft palate in a pig; while at a recent meeting of the Medical Society of Greifswald, Professor Grawitz exhibited the inferior maxilla of a calf that had succumbed to actinomycosis, the fungous masses and bone of which when sawn through were discovered to contain several grains of corn, it being surmised that the actinomycetes had obtained admission to the tissues through the abrasions made by these grains. This mode of penetration will explain the frequency with which the jaws, mouth and pharynx are involved; wounded gums or carious teeth afford a good lodgment for the parasite. In Italy and Bavaria as well as in Pomerania the actinomycotic glossitis has prevailed in an almost epizootic form during outbreaks of foot-and-mouth disease. Inhalation of dust from dry fodder will account for the pulmonary form, and the invasion of other organs may be accounted for in a similar manner. The fungus is in all probability conveyed through the connective-tissue spaces, the blood stream and lymphatics having little or no share in its distribution in the body.

There is no proof that the malady is contagious in the ordinary acceptation of the term, and if it is at all so it must be in a very feeble degree. The infection of mankind appears to be quite independent of diseased animals, as it exceedingly rarely happens that persons suffering from actinomycosis have had any relations with diseased cattle. Moosbrugger has collected the histories of seventy-five cases, and of all these only one of the persons had been in contact with cattle suffering from the maxillary form, while forty-nine of them had nothing at all to do with cattle. The malady is difficult to produce experimentally, as although it may be successfully developed now and again, yet when a series of inoculations are attempted the result is always failure; so the conclusion arrived at is that the source of infection is the same for mankind as it is for animals, and that the medium of conveyance in both is probably grain of various kinds; as in the majority of cases of human actinomycosis the origin of which has been traced, it has been found that the persons had chewed or unwittingly swallowed a piece of straw, or barley or wheat grains with the hulm on. There does not seem to be any reason whatever to interdict the flesh of affected animals as food for man so long as the actually diseased parts are destroyed.

The treatment of actinomycosis is a matter of great importance, of course, and it has generally been considered, in man at least, an almost incurable, if not a hopeless disease. But Raffer, in the *Riforma Medicale* of February 4th, has reported four cases of recovery, in which the disease was accessible to surgical measures. These were scraping and the injection of antiseptics into the tumours—these injections consisting of a 5 per cent. solution of carbolic acid in glycerine, and if sinuses were present, cotton wool saturated with this fluid was introduced into them. Veterinary surgeons have for a long time employed tincture of iodine with much success as a local application, but quite recently a very distinguished teacher at the Utrecht Veterinary School has drawn attention to the value of iodide of potassium in every form of the disease when given as a drug; from his experience of this agent in cattle affected with actinomycosis, he pronounces it an infallible remedy and Professor Nocard, at a recent meeting of the Paris Central Veterinary Society, in giving an interesting account of the disease, mentioned instances to prove that this medicament promptly and radically cures actinomycotic glossitis in cases which were formerly deemed hopeless. The dose for the ox began with 6 grammes in half a pint of water once a day to commence with, soon increased to 8 grammes, until signs of iodism began to manifest themselves, when it was continued for a few days longer; amendment gradually ensuing without any local treatment. In some instances 6 grammes were given daily for eight days, and when marked amelioration in the symptoms was noted—which was generally in about eight days—the dose was reduced to 4 or 5 grammes at the most. If iodide of potassium is of such potency in this disease as it affects cattle, why should it not be as useful in man? It is certainly worthy of an extensive trial in the human species in which treatment is so often unavailing, especially in those cases where the affected structures cannot be reached. Should the iodism be rather severe there is no great danger to be apprehended, as with the diminution of the dose of the drug or its cessation the more serious symptoms soon subside. It is to be hoped that in medical practice it will prove itself to be as much a specific for this intractable and grave disorder as it is reputed to be in veterinary practice.

MEDICAL PRACTITIONERS AND THE GENERAL ELECTION.

IN illustration of the fact that medical men are becoming alive to the necessities of bringing their particular case before the notice of the candidates for Parliamentary honours we note that a deputation of medical men waited upon Mr. Byron Reed, a candidate for the Eastern Division of Bradford, to ascertain his views on matters affecting the profession in its relation with the public. The importance of the facts is not restricted to one constituency and we therefore trust the attention of all candidates may be directed to the facts which were urged by this deputation.

Dr. Hime, in addressing Mr. Byron Reed, alluded to the progress of unreasonable legislation which singled out the medical profession for the compulsory performance of certain duties

which the Legislature had come to regard as of great public utility. Now the medical profession objected strongly to the knowledge which they had gained without the assistance of the Government in their medical studies being claimed by the public as their property under any circumstances and whether they were paid for it or not. At the present time a medical man was under legal compulsion to sign a certificate of death for which he received no remuneration whatever. By law the certificate could only be utilised for the purpose of burial, but in practice it was utilised for insurance, for club purposes and many others. The notification of infectious diseases had also been made compulsory on medical men, a thing which was without analogy in other cases. He drew attention to the enormous number of deaths which were not inquired into although they were not certified by any medical man. It was left absolutely optional with the registrar whether he would accept the tale of any informant as to the circumstances of a death and certify for burial or not. Throughout the whole country medical men found it not infrequently happened that if knowing of the circumstances of a death they thought it necessary to refuse a certificate because they considered there had been foul play, yet, when they notified that fact which was the result of their personal knowledge, the coroner might and did constantly grant certificates of burial. In order to justify him in doing so, as a rule, he sent his policeman to make inquiries. He, of course, only received the information from interested parties, and that was one-sided, and supported his (Dr. Hime's) statements.

Other subjects calling for reform were instanced, including the question of medical and post-mortem examinations in medico-legal cases. The inadequacy and injustice of the present method, by which any practitioner, who may be practically the mainstay of the prosecution, can alone and unaided and without any supervision make a post mortem, on the report of which a life may be dependent, were strongly condemned.

Mr. Byron Reed, in reply, expressed his astonishment at the number of facts brought to his knowledge for the first time. They were such as called for the serious consideration of the Legislature, and he promised, if returned to Parliament that any bill bearing upon the medical profession or its relation to the public, either directly or indirectly, should not be carried without receiving his most serious attention, and he would, as far as in him lay, urge this upon those members of the House with whom he had any personal influence.

The deputation thanked Mr. Byron Reed for the interest he took in the matter and the courtesy with which he had received them and retired.

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY, LIMITED.

A WELL-ATTENDED meeting was held on Monday, June 20th, 1892, at Dr. Arthur Roper's house at Lewisham Hill, for the purpose of establishing a division of the above society for the Lewisham, Woolwich, Greenwich, and adjacent parts of the S.E. district. On the motion of Dr. Purvis, seconded by Dr. Stevenson, Dr. Arthur Roper presided. Dr. Roper briefly stated his opinion as to the necessity and utility of such a society for London and the neighbourhood and called upon Dr. Mead to more fully explain the matter. Dr. Mead then went into the details connected with the formation of the Society and the steps which had been taken to place it on a broad and representative basis, and to secure to each member the fullest possible consideration of his case, either locally, or if he deemed it advisable, by the Central Council and the Emergency Committee, both of which were easily accessible. The Legal Council, consisting as it did of men of very high standing, constituted a court of final appeal of the very highest character and value. As to funds, the Council had ample means at their disposal, and were prepared at once to defend any member whose case was worthy of defence. Dr. J. Maxwell, Dr. Mercier and Dr. Purvis spoke in favour of a Society having its central Council in London, and pointed out that by means of the district Councils local cases could be undertaken and probably amicably settled. Dr. Heron pointed out that there was ample room for such a society. This was shown by the large numbers who had already joined this Society. The wish of the Council was to work amicably with any society seeking to benefit the profession. London was pre-eminently the place where any important case affecting the profession should be tried and the difficulties of general practice could always find better and quicker solutions there, seeing that the majority of the leaders of the profession resided in London.

It was then resolved that a division should be formed for that portion of the south-east district and parts adjacent to it. Dr. Arthur Roper was elected president, and Dr. Scott was appointed secretary to the branch. In addition to those who had already joined, seventeen new members gave in their names.

MILITARY SURGERY IN CHILI.

A REPORT has been published of the work done in the San Augustin Hospital, Valparaiso, from Aug. 28th, 1891—when the Constitutional party gained possession of the city after Balmaceda's defeat—to Jan. 15th, 1892, when the hospital was closed. It will be remembered that the fighting had been discontinued four or five days previously, the great battle having taken place from the 21st to the 23rd. When Señor Benjamin Edwards took charge of the hospital as administrator on Aug. 28th the building was empty and he had to make the best arrangements he could in the disorganised state of the town for the reception and care of the wounded who were being brought in from the field of battle. The medical service had to be organised. Dr. José Rivero was appointed chief medical officer and a staff of surgeons and dressers was soon got together, a good deal of assistance being obtained from the surgeons of the English, French, German and United States vessels at anchor in the harbour.

During the period the hospital was open 1008 patients were treated, not reckoning those who were passed on to other hospitals on ambulances within the first week or two. Of this number 936 were discharged cured or improved and seventy-two died. In 132 cases there were two or more wounds, and in five there were four bullet wounds. The rifle used seems to have been the Mannlicher, which has a small, highly polished, steel-tipped projectile with a very high velocity and a gyratory motion. The wounds were as a rule small and not dangerous to life, though sufficiently serious to put a man *hors de combat* for several weeks. The orifices of entrance and exit were very small and generally cicatrised quickly, with very little suppuration. When the path was merely through muscular tissue healing generally took place without any trouble, just as in a subcutaneous wound—that is, if care had been taken to remove all foreign bodies. The orifice of entrance had clean edges and a diameter much smaller than that of the ball. The orifice of exit was very different and was of various shapes, according to the bony or tendinous tissues the ball had met with. Owing to the outer casing with which the bullet is furnished it generally preserves its form and so produces far less injury to the tissues than the leaden bullets used in the Franco-German war, which frequently broke or became splayed out when they struck a bone. Extraction is too, of course, a much easier matter than with the old-fashioned bullets. In many cases where considerable osseous lesions were produced the wounds healed well and rapidly.

There were twenty-four cases of hospital gangrene attributable to the impossibility of maintaining rigorous aseptic conditions, and doubtless accelerated and aggravated by the drinking habits of the patients. The wounds of the upper extremity are returned as 23 per cent. of the total wounds; those of the lower extremity being 42 per cent. The mortality of fractures of the femur was 25 per cent. The head of the femur was removed five times, with three deaths. The mortality of wounds of the thorax was 54·5 per cent., which compares favourably with that of the Franco-German war, which was over 60 per cent., or that of our troops in the Crimea, which was nearly 70 per cent. There were ten cases of wounds of the abdominal walls, all of which recovered, and sixteen penetrating wounds, of which six recovered, thus giving a mortality for all abdominal wounds of 62·5 per cent., as against 87 per cent. in the Franco-German war and 92 per cent. in the English army in the Crimea. The mortality of the cases of fracture was 6·96 per cent., the number of operations 46·03, and the number of cases where conservative surgery was successful was 47·01 per cent.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following list is a continuation of the contributions received at the Mansion House up to Thursday last in aid of the Metropolitan Hospital Sunday Fund:—

	£	s.	d.
St. Peter's, Vere-street (Rev. W. Page Roberts)	323	3	7
Trinity Church, Hampstead (Rev. H. Sharpe, B.D.)	101	10	6
St. John's, Paddington (Rev. Gilbert Karney)	139	8	11
St. Michael's, Paddington (Rev. G. F. Prescott)	173	17	10
Holy Trinity, Paddington (Rev. Prob. D. Moore)	151	13	7
St. Alban's, Streatham-park (Rev. S. M Ranson)	107	17	10
St. Paul's, Onslow-square (Rev. H. Webb-Peploe)	324	11	7
St. Peter's, Eaton-square, £610 1 1 St. John's, Wilton-road .. 101 13 4 St. Peter's Chapel .. 10 19 8 (Rev. John Storrs) ..	722	14	1
St James's, Clapham (Rev. F. A. C. Lillingstone)	130	18	3
St. Peter's, Brockley (Rev. C. H. Grundy)	102	0	0
St. Andrew's, Wells-street (Rev. W. T. Houldsworth) ..	111	15	6
St. Paul's, Knightsbridge (Rev. H. M. Villiers)	340	8	10
Union Congregational Church and Mission, Islington (Rev. W. H. Harwood)	100	0	0
St. Luke's, Nutford-place (Rev. B. H. Alford)	88	7	9
Streatham Parish Church and Mission (Rev. Canon Nicholl)	75	18	7
Church of the Ascension, Balham-hill (Rev. Herbert Curtis)	95	5	6
St. Andrew's, Stockwell (Rev. C. E. Escreet)	20	0	10
Holy Trinity, Anerley ((Rev. C. A. Keightley)	60	11	0
Lewisham Parish Church (Rev. S. Beckersteth)	44	0	6
Hornsey Parish Church and Chapel of Ease (Rev. James Jeakes)	57	5	10
Waltham Abbey Parish Church and Hamlet Chapels (Rev. F. B. Johnston)	56	14	6
St. Saviour's, Brixton-hill (Rev. F. G. Sanders)	20	10	3
Acton Parish Church and Missions (Rev. C. M. Harvey) ..	41	7	1
Highgate Parish Church (Rev. J. M. Andrews)	36	1	6
"F." (a further)	50	0	0
Trinity Presbyterian Church, Clapham-road (Rev. D. MacEwan, D.D.)	20	6	0
Heath-street Baptist Chapel, Hampstead (Rev. W. Brock) ..	55	16	4
St. Mark's, Notting-hill (Rev. W. E. Emmet)	33	8	7
St. Dunstan's, East Acton (Rev. T. M. Hayter)	30	1	9
Fulham Parish Church (Rev. W. Carter Muriel)	34	15	0
Christ Church, Chislehurst (Rev. W. Fleming)	66	11	11
W. M. Cross, Esq. (C.C.)	20	0	0
St. Paul's, Greenwich (Rev. A. Love)	20	5	8
Gordon-square Catholic Apostolic Church (H. S. Hume, Esq.)	20	2	11
Kingston-on-Thames Parish Church (Rev. A. S. W. Young)	25	0	0
St. Alban's, Holborn (Rev. R. A. J. Suckling)	50	3	7
St. Andrew's, Leytonstone (Rev. W. Manning)	23	12	6
St. Thomas's, Camden Town (Rev. H. W Reynolds)	21	4	6
St. Peter's, Norbiton (Rev. John Rooker)	22	2	2
Willesden Parish Church (Ven. Archdeacon Atlay)	28	8	8
Wandsworth Wesleyan Circuit (Rev. G. R. Osborn) ..	22	4	7
Trinity Presbyterian Church, Notting-hill (Rev. Dr. H. S. Paterson)	47	6	2
St. John's, Downshire-hill (Rev. Canon Girdlestone) ..	57	13	3
St. John's, Redhill (Rev. J. M. Gordon)	51	11	9
Christ Church, Beckenham (Rev. John Harding)	38	5	10
Allen-street Congregational Church, Kensington (Rev. C. S. Horne, M.A.)	78	5	6
Christ Church, Westminster-road (Rev. Newman Hall) ..	20	8	8
St. Andrew's Presbyterian Church, Upper Norwood (Rev. R. Taylor)	25	0	0
St. George's, Tufnell-park (Rev. W. T Hollins)	50	8	0
St. Luke's, West Norwood (Rev. H. W. Cooper)	28	0	0
Friends' Meeting House, Stoke Newington (E. R. Allen, Esq.)	24	10	9
St. Mary's, Graham-street (Rev. H. M Villiers)	20	17	1
St. George's, Westcombe-park (Rev. W. Soames)	30	4	3
Brixton-road Congregational Church (Rev. B. J. Snell, M.A.)	59	12	8
St. Saviour's, Denmark-park (Rev. H. S. Swithinbank) ..	25	14	9
St. Mary Magdalene, Paddington (Rev. R. T. West, D.D.) ..	39	1	7
Emmanuel Church, Maida-hill (Rev. J Gosset Tanner) ..	28	3	0
Denmark-hill German Lutheran Church (Rev. Alex. Wysard)	64	17	1
Chapel Royal, St James's (Rev. E. Sheppard)	77	11	0
St. Mark's, Kennington (Rev. A. Gerald Bowman)	40	17	2
St. John's, Bromley, Kent (Rev. P. Barker)	22	3	8
St. John's Presbyterian Church, Forest-hill (Rev. W. Martin, M.A.)	55	0	0
All Saints', Blackheath (Rev. H. Welsford Snell)	61	2	3
St. Paul's, Beckenham (Rev. Charles Green)	111	10	4
Dartford Parish Church and Mission (Rev. Allan H. Watts)	24	1	8
Trinity Church, Hampstead (Rev. Hy. Sharpe, B.D.) ..	101	10	6
Holy Innocents', Hornsey (Rev. R. W. Powell)	44	15	9
St. James's Parish Church, Paddington (Rev. W. Abbott) ..	123	4	6
St Martin's-in-the-Fields Parish Church (Rev. J. F. Kitto)	107	9	2
Emmanuel Church, Streatham (Rev. G. S. Streatfield) ..	109	6	10
St. Bartholomew's with St. Matthew's, Sydenham (Right Rev. Lord Bishop of Southwark)	144	5	7
Christ Church, Westminster (Rev. F. K. Aglionby)	20	0	0
St. John the Evangelist, Brownswood Park (Rev. G. B. Lattreille)	25	2	1
Christ Church, Streatham (Rev. C. S. Nicholl)	111	10	0
Christ Church, Gypsy Hill (Rev. R. Allen; morning collection)	71	2	0
All Saints', Paddington (Rev. J. Machonochy)	38	7	8
St. Anne's, Holloway (Rev. W. H. Chambers, D.D.)	28	8	6
Chapel of Ease, Islington (Rev. W. Nelson Wian)	21	14	0
St. Thomas's, Regent-street (Rev. Philip T. Bainbrigge; half of offertory)	40	14	7
Stepney Parish Church (Rev. E. Hoskyns)	35	4	2
Holy Trinity, Knightsbridge (Rev. C. C. Scholefield) ..	50	6	7
St. Thomas's, Stamford-hill (Rev. F. W. Kingsford)	31	12	5
St. Mary's, Bryanston-square (Rev. the Hon. Canon Leigh)	80	10	8
St. Saviour's, Fitzroy-square (Rev. Thos. Turner)	34	10	0
Westbourne Park Baptist Chapel (Rev. John Clifford, D.D.)	29	2	0
West Hackney Parish Church	42	19	5
All Saints', Camberwell (Rev. T. J. Gaster)	31	1	11
Park Chapel, Crouch End (Rev. A. Rowland)	50	0	0
Emmanuel Church, Forest Gate (Rev. E. Wynne)	25	2	6
St. Mary the Virgin, Primrose-hill (Rev. Albert Spencer) ..	44	6	3
Wansteed Friends' Meeting (J. Lyster Godlee, Esq.) ..	43	17	8
South-street Baptist Chapel, Greenwich (Rev. C. Spurgeon)	21	17	3
Argyle-square New Jerusalem Church (Rev. J. Presland)	20	0	0
Box outside Mansion House	14	18	9

N.B.—The congregational collections are mostly an improvement on last year, but the gross receipts must be less for 1892 unless donations are sent to the Lord Mayor to form some equivalent to the £5000 sent in 1891 by the late Duke of Cleveland.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Lewes Urban District.—Mr. J. G. Braden has a fairly favourable report to give for last year. The death-rate was 15·1 per 1000 living; but the decennial average is 17·6, and this is very properly regarded as too high for a town like Lewes. The drainage of Lewes is receiving and calls for attention. But the progress made is slow and in the Cliffe portion of the district, which lies low, there are indications that amendments are needed. The town water is good and arrangements are being made to ensure its being abundant. The hospital was not used last year, although a number of scarlet fever attacks occurred. In only two instances did multiple cases arise and it is implied that the attacks did not occur under circumstances actually calling for removal to hospital. In short, the Lewes hospital seems to serve rather for emergencies than for any sustained isolation of infectious cases.

Coventry Urban District.—Coventry is an old city and has sanitary difficulties to contend with, but during the last five decennial periods the general rate of mortality has gone down from 27 to 18·5 per 1000. Last year it stood at 19·6. House property and its defects constitute a substantial hindrance to sanitary progress, and Dr. Mark Fenton urges prominently the need for the adoption of more efficient measures for the improvement of the dwellings of the poor. An increased water-supply and better arrangements for the scavenging of refuse are also needed. The city isolation hospital has all along been satisfactorily worked under Dr. Fenton's supervision. In 1874, when it was first opened, twelve patients were admitted, but since then the annual admissions have reached and even exceeded 200. Every effort is made to prevent the spread of infection by means of isolation, and in this connexion it may be mentioned that whereas the zymotic rate for the ten years ending 1881 was 3·3 per 1000, it was only 1·7 in the decennium terminating last year.

Worsbrough Urban District.—The death-rate of this little urban district of less than 10,000 inhabitants reached 23·7 per 1000 last year, the excess being due to measles, scarlet fever, influenza, and whooping-cough, diseases which had not been brought about by defective sanitary circumstances. Unfortunately, little could be done as to removal of scarlet fever cases to the Barnsley hospital. Dr. M. T. Sadler makes certain suggestions as to improvement in scavenging and as to overcrowding. Otherwise sanitary matters seem in a fairly satisfactory state.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6378 births and 3348 deaths were registered during the week ending July 2nd. The annual rate of mortality in these towns, which had been 17·8 and 17·3 per 1000 in the preceding two weeks, further declined last week to 17·1. In London the rate was 16·8 per 1000, while it averaged 17·3 in the thirty-two provincial towns. The lowest rates in these towns were 9·4 in Brighton, 13·6 in Leeds, 13·7 in Blackburn and 13·8 in Hull; the highest rates were 21·8 in Oldham, 21·9 in Manchester, 22·4 in Sunderland and 22·5 in Preston. The 3348 deaths included 486 which were referred to the prin-

cipal zymotic diseases, against 514 and 477 in the preceding two weeks; of these, 170 resulted from measles, 108 from diarrhœa, 78 from whooping-cough, 55 from diphtheria, 46 from scarlet fever, 34 from "fever" (principally enteric) and 5 from small-pox. No fatal case of any of these diseases occurred last week in Gateshead; in the other towns they caused the lowest death-rates in Brighton, Bradford and Burnley, and the highest rates in West Ham, Birkenhead, Preston and Sunderland. The greatest mortality from measles occurred in Sheffield, Birkenhead, Birmingham, Leicester, Halifax, West Ham and Sunderland; from scarlet fever in Swansea; from whooping-cough in Sunderland, Croydon, Wolverhampton and Preston; from "fever" Birkenhead; and from diarrhœa in Plymouth, Leicester, Sunderland, Preston and Norwich. The 55 deaths from diphtheria included 38 in London, 3 in Leeds and 2 each in West Ham, Birmingham and Bolton. Four fatal cases of small-pox were registered in London and one in Halifax, but not one in any other of the thirty-three large towns; 35 cases of this disease were under treatment in the Metropolitan Asylum Hospitals and 5 in the Highgate Small-pox Hospital on Saturday last. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2211, against numbers increasing from 1226 to 2066 on the preceding fourteen Saturdays; 331 new cases were admitted during the week, against 213 and 284 in the previous two weeks. The deaths referred to diseases of the respiratory organs in London, which had declined from 304 to 181 in the preceding seven weeks, rose again to 185 last week, but were 27 below the corrected average. The causes of 59, or 1·8 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Brighton, Portsmouth, Cardiff, Blackburn, Sunderland and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Salford, Oldham, Halifax and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·7 and 19·3 per 1000 in the preceding two weeks, declined again to 18·0 during the week ending July 2nd, but exceeded by 0·9 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 8·6 in Perth and 9·1 in Greenock to 20·3 in Glasgow and 20·8 in Aberdeen. The 502 deaths in these towns included 31 which were referred to measles, 23 to whooping-cough, 9 to scarlet fever, 9 to diarrhœa, 7 to diphtheria, 4 to "fever," and not one to small-pox. In all, 83 deaths resulted from these principal zymotic diseases, against 66 and 85 in the preceding two weeks. These 83 deaths were equal to an annual rate of 3·1 per 1000, which exceeded by 0·6 the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had been 27 and 35 in the preceding two weeks, declined again to 31 last week, of which 27 occurred in Glasgow and 3 in Edinburgh. The deaths referred to whooping-cough, which had been 27 in each of the previous two weeks, fell to 23 last week and included 19 in Glasgow. The 9 fatal cases of scarlet fever showed an increase of 6 upon the number in the preceding week; 5 occurred in Glasgow and 3 in Edinburgh. The deaths from diphtheria, which had been 2 and 8 in the previous two weeks, were 7 last week, of which 5 were recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 124 to 80 in the preceding three weeks, rose again to 89 last week, but were 17 below the number in the corresponding week of last year. The causes of 57, or more than 11 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 31·6 and 27·4 per 1000 in the preceding two weeks, further declined again to 24·6 during the week ending July 2nd. During the thirteen weeks of the quarter ending on Saturday last the death-rate in the city averaged 31·3 per 1000, against 18·9 in London and 17·8 in Edinburgh. The 165 deaths in Dublin during the week under notice showed a decline of 19 from the number in the preceding week and included 20 which were referred to measles, 1 to whooping-cough, 1 to "fever," 1 to diarrhœa and not one either to small-pox, scarlet fever, or diphtheria. In all, 23 deaths resulted from these principal zymotic diseases, equal to an annual rate of 3·4 per 1000, the zymotic death-rate during the same period being 3·1 in London and 2·2 in Edinburgh. The fatal cases of measles, which had been 27 and 24 in the preceding two weeks, further declined to 20 last week. The deaths referred to whooping-cough, which had been 5 in each of the previous two weeks, declined to one last week. The 165 deaths registered in Dublin last week included 25 of infants under one year of age and 30 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a decline from those recorded in recent weeks. Four inquest cases and 4 deaths from violence were registered; and 60, or more than a third, of the deaths occurred in public institutions. The causes of 16, or more than 9 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

CHOLERA AT LAHORE.

THE outbreak of cholera among the medical students at Lahore is said to be of a severe type. Four cases have proved fatal since June 8th, among the victims being a European lady student. A few fatal cases have also occurred among the native patients in the upper wards of the Mayo Hospital.

GOOD SERVICE PENSION.

It is notified that, on the recommendation of the Government of India, Her Majesty's Government has been pleased to confer a good-service pension on the undermentioned officer from date specified:—In place of Colonel C. S. Maclean, C.B., C.I.E., I.S.C., who succeeded to colonel's allowance on Dec. 14th, 1891, Surgeon-Colonel Archibald Hamilton Hilson, M.D., I.M.S.

EMPLOYMENT FOR ARMY RESERVISTS.

Medical officers are quite as much interested, of course, as other officers in the well-being of soldiers leaving the Army for the Reserve, and they will be glad to learn therefore that the recent appeal by the War Office to the railway companies promises to be successful. It has been intimated to Mr. Brodrick, Financial Secretary to the War Office, that the companies will be prepared to give about 2000 vacancies annually to Army Reservists of good character. This, taken in connexion with their employment as postmen, which will be hereafter open to soldiers who have served with the colours, is a move in the right direction, and the departments concerned are to be congratulated on having tried successfully to benefit the soldier's position by increasing the opportunities for his employment in civil life.

SICKNESS IN THE MEDITERRANEAN FLEET.

With regard to the alleged sickness in the Mediterranean fleet it is pertinent to remark that, according to past experience, an increase in the number of fever cases at this season is to be expected. Much of the sickness in the summer is attributable to the heat and local causes, aided by indiscretions of diet on the part of individuals; that which is of a serious character is due to typhoid fever and to another form of fever, the exact nature and causes of which do not seem to have been fully ascertained. Malta and Gibraltar have of late years been healthy, we believe.

THE WANT OF CIVIL SURGEONS AT INDIAN STATIONS.

We recently called attention to the alleged dearth of doctors in civil stations of Bengal according to the lay papers of that country. Our contemporary, the *Indian Medical Gazette* for last month, alluding to the same subject, says that there is a general impression prevalent that the medical needs of the community at these stations is not sufficiently realised by the Government; localities not remarkable for their healthiness are left with insufficient medical provision.

EXPERIMENTS WITH SNAKE POISON.

As our readers are aware, the annual loss of life from snake-bite in India is very large. The committee for the management of the Zoological Gardens in Calcutta are constructing a snake-house to contain specimens of all the principal poisonous snakes of the country, in connexion with which it is proposed, as we have already informed our readers, to fit up a small laboratory for conducting investigations bearing upon the pathology of snake-bite and cognate sub-

jects. The Government of Bengal has addressed the Government of India on the subject. If the latter would make a grant of Rs. 5000 towards this object the Lieutenant-Governor of Bengal will endeavour to make up the required balance from provincial funds. As it is understood that Dr. D. D. Cunningham, F.R.S., will take an active part in organising and promoting the necessary inquiries and carrying out the necessary experiments, it is to be hoped that the project will be carried to a successful issue. The various alleged remedies for snake-bite from time to time brought to notice might then be tested.

MOVEMENTS OF THE MEDICAL STAFF.

The retirement on retired pay of Surgeon-Lieutenant-Colonel C. E. Dwyer has been cancelled. Surgeon-Lieutenant-Colonel Blood has resumed duty at Winchester from sick leave. Surgeon-Major W. Campbell has assumed medical charge of the camp at Bisley. Surgeon-Lieutenant-Colonel D. B. Brown has rejoined at Piershill, from leave. Surgeon-Major A. A. Lyle has joined at York, from Chester. Brigade-Surgeon-Lieutenant-Colonel R. H. Carew has proceeded from Meean Meer to Kashmir on sick leave, and Surgeon-Lieutenant-Colonel J. D. Gunning from Bareilly to Mussoorie. Surgeon-Lieutenant-Colonel Gabbett has obtained sick leave from Madras. Brigade-Surgeon-Lieutenant-Colonel Riordan is proceeding to England from Cyprus on leave. Surgeon-Lieutenant-Colonel Barrow is expected in England from Hong-Kong, on relief. Brigade-Surgeon-Lieutenant-Colonel T. D. O'Farrell is placed on retired pay. Surgeon-Lieutenant-Colonel Supple has resumed his duties as senior medical officer in Jersey. Surgeon-Captain W. H. P. Lewis has taken up duty at the Arsenal, Woolwich. Surgeon-Captains Sparke, Hall and Burke have respectively left Warley and Colchester on leave. Surgeon-Captain J. J. C. Watson has proceeded to Bisley Camp from Aldershot and D. O'Connell has rejoined at Aldershot from leave. Surgeon-Captain S. R. Wiles has been transferred from York to Chester. The following officers have obtained sick leave to England from Burmah and Bombay severally:—Surgeon-Captains Green and Holyoake. The leave of Surgeon-Captains C. C. Reilly and J. S. Black from Bengal has been extended. Surgeon-Majors Feltham and Asbury have been granted leave to England from Madras. Surgeon-Captain Sexton has joined at the Curragh for duty and Surgeon-Captain Lensham has proceeded to Dublin. Surgeon-Captains H. Thompson and Hanley are under orders for foreign service. Brigade-Surgeon-Lieutenant-Colonel Ignatius McDonogh O'Farrell, F.R.C.S.I., is placed on retired pay (dated June 16th, 1892).—Surgeon-Captain R. C. Johnston, M.B., is placed on retired pay (dated July 6th, 1892).—Surgeon-Lieutenant-Colonel C. E. Dwyer has been appointed to the Recruiting Staff in London.

ARMY TITLES AND RETIRED MEDICAL OFFICERS.

An agitation is, we understand, being set on foot to procure for army medical officers who were on the Retired List prior to the issue of the Warrant conferring the new titles the right to assume the titles now enjoyed by their colleagues on full pay. As a considerable number of these officers are liable to be recalled to service on "an emergency," the application is, in their case at any rate, a reasonable one and seems to deserve favourable consideration, as, if it should be refused, complications as to seniority would arise which th concession would promptly avert.

INDIAN MEDICAL SERVICE.

The Commander-in-Chief is pleased to make the following appointments:—5th Bombay Cavalry (Sind Horse): Surgeon-Captain J. G. Hojel to the medical charge, vice Surgeon-Captain T. E. Dyson, transferred to the Civil Department.—7th Bombay Lancers (Baluch Horse): Surgeon-Captain J. B. Jameson to officiate in medical charge, vice Surgeon-Captain J. L. T. Jones, on furlough.—2nd Bombay Infantry (Grenadiers): Surgeon-Captain C. T. Hudson to officiate in medical charge, vice Surgeon-Captain A. Milne, transferred temporarily to the Civil Department.—Surgeon-Captain B. D. Basu is posted to general duty, Sind District.

Surgeon-Captain H. I. Pocock, serving in the Bengal Command, has been appointed to the civil medical charge of Roorkee, in addition to his military duties.—The following changes of station have recently taken place:—Surgeon-Majors: C. H. Swayne, Dublin to Londonderry; P. M. Ellis, to Aldershot; P. J. O. Sullivan, Bengal to Dublin; H. Grier, Nova Scotia to Aldershot; A. Harding, Bombay to Aldershot; E. H. Myles, Swansea to Devonport; G. F. A. Smythe, Dover to Canterbury; W. O. Wolseley, to Chester; P. H. Fox, Madras to Ballincollig. Surgeon-Captains: M. W. Kerin Cork to Dublin; J. G. W. Crofts, Edinburgh to Home District; M. O'C. Drury, Bombay to Aldershot; H. A. de Lom, Dover to Bombay; A. Perry, Home District to Ceylon; H. J. Fletcher, Bengal to Stoneleigh; G. G. Adams, Horfield to Cirencester; J. M. F. Shine, Bengal to Dublin; W. H. Bennett, Madras to Lonford; P. C. H. Gordon, Edinburgh to Ayr; A. L. H. Dixon, Bombay to Aldershot; P. J. R. Nunnerley, Chester to Stafford; C. Garner, Bermuda to Devonport; J. D. Deacon, Ballincollig to Cork; G. A. Wade, Jamaica to Devonport; C. W. R. Healey, Lichfield to Bengal; W. E. Hardy, Colchester to Dover.—The undermentioned Surgeon-Lieutenants have been transferred from Aldershot as follows:—W. G. Beyts, to Edinburgh; S. H. Withers, to Golden-hill Fort; L. A. Mitchell, to Pembroke Dock; J. Henessy, to Horfield; C. B. Martin, to Alnwick; Surgeon-Lieutenant J. M'Laughlin, Sierra Leone to Bathurst; R. Crofts, Sierra Leone to Lagos.

Bengal.—The services of the undermentioned Officers of the Bengal Medical Establishment are placed temporarily at the disposal of the Bengal Government:—Surgeon-Captain C. E. Sunder, M.B.; Surgeon-Captain A. H. Nott, M.B.; and Surgeon-Captain J. T. Calvert, M.B.

Surgeon-Major Owen, I.M.S., Medical Officer on Lord Roberts' Staff, has been appointed Civil Surgeon at Ajmere.

The Governor in Council is pleased to appoint Surgeon-Major J. S. Wilkins, D.S.O., to act as Civil Surgeon, Kaira, in addition to his own duties, during the absence of Surgeon-Captain W. H. Quick on privilege leave.

Surgeon R. Baker, M.A., M.D., and Surgeon-Major H. M'Calman, M.D., respectively delivered over and received charge of the Batnagiri Gaol on June 4th, 1892.

YEOMANRY CAVALRY.—Ayrshire: Surgeon-Captain W. J. Naismith, M.D., to be Surgeon-Major (dated July 2nd, 1892).

VOLUNTEER CORPS.—*Artillery:* 2nd Cinque Ports (Eastern Division, Royal Artillery): The undermentioned Surgeon-Lieutenants to be Surgeon-Captains:—F. M. Wallis and F. H. Shaw (both dated July 2nd, 1892).—*Rifle:* 1st Volunteer Battalion, the King's (Liverpool Regiment): James Charles Bradshaw, Gent., to be Surgeon-Lieutenant (dated July 2nd, 1892).—1st Volunteer Battalion, the Suffolk Regiment: Surgeon-Lieutenant S. S. Hoyland to be Surgeon-Captain (dated July 2nd, 1892).—(2nd Berwickshire) Volunteer Battalion, the King's Own Scottish Borderers: Surgeon-Lieutenant A. D. Vardon resigns his commission (dated July 2nd, 1892).—1st (Pembrokeshire) Volunteer Battalion, the Welsh Regiment: Surgeon-Lieutenant W. H. Lloyd to be Surgeon-Captain (dated July 2nd, 1892).—2nd (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Captain W. G. Stevens to be Surgeon-Major (dated July 2nd, 1892).

Correspondence.

"Audi alteram partem."

"TOOTH CULTURE."

To the Editors of THE LANCET.

SIRS,—In his interesting lecture on "Tooth Culture," Sir James Crichton-Browne enumerates four causes of caries; among them he includes imperfect mastication. He thinks "that the greater prevalence of dental caries in these days is probably in some measure dependent on the softness and pulpiness of the food on which we for the most part feed." I have for some time been strongly of opinion that this is the great cause of caries among the moderns. He points out that soft food means comparatively little mastication and use of the teeth, that the flow of the saliva is thereby diminished and that in consequence, the teeth not being properly cleansed by an abundant flow of saliva, nor by the scrubbing action of the parts engaged in mastication, particles of food are lodged about the teeth and gums and by their decomposition injure the teeth. Few can doubt the reasonableness of that view, but I venture to think that imperfect mastication favours dental caries in another and even more potent way—namely, by interfering with the proper development not only of the jaws, thereby causing over

crowding of the teeth (an acknowledged cause of decay), but of the teeth themselves; and it goes without saying that an ill-grown tooth is more liable to decay than one well developed. This fact is well attested by the early decay of the puny wisdom teeth. That imperfect mastication prevents the teeth from properly developing I can testify from observation, and the manner in which this result is brought about is obvious. With the movements of mastication the jaws become more vascular, there is a large access of blood to the dental arteries, the teeth move perceptibly in their sockets and their blood-supply is greatly increased. They are in fact outgrowths of the jaws, so that it is absolutely impossible to get well-developed teeth in an ill-developed jaw. The teeth in such a jaw may indeed be large, but careful examination of a section of them shows them to be ill-developed. One of the most noticeable effects of imperfect mastication on maxilliary development is atrophy of the alveolar processes and early shedding of the teeth. Examine the mouth of a woman—say, from fifty to sixty years old—in a London hospital. It will very often be found that most of the teeth have dropped out and that only two or three remain, projecting far out of their sockets. Such teeth are of course more than useless in that they completely prevent the proper closing of the jaws, which, together with the muscles of mastication, remain practically in a state of disuse. No wonder that alveolar absorption proceeds apace, that the gums are spongy, and the whole interior of the mouth in a loathsome state, a state to which Sir James Crichton-Browne's apt quotation from Shakespeare but too truly applies. Among poor women the teeth are seldom worn down to any appreciable extent, so little have they been used, and indeed among civilised people one never finds the same degree of attrition met with in the teeth of ancient skulls, and this indicates an amount of mastication scarcely less than that of the ruminant. I have little doubt that by a proper use of the jaws in mastication not only might overcrowding be largely prevented, but a healthier development of the individual teeth ensured also and dental caries very considerably diminished. Of the many writers upon the teeth whom I have consulted from time to time Mr. Coleman is the only one who has insisted upon the point I urge—viz., that ill-growth of the teeth, resulting from imperfect use, is a cause of decay. He, however, it is only fair to say, is most emphatic. I would observe in conclusion that the atrophy of the jaws among civilised peoples is only in part the outcome of heredity, that it is in the main acquired by the individual himself, for Weismann, even though he may not have proved that acquired characters are never inherited, has yet made it quite clear that they are not inherited to the degree generally supposed. If therefore an individual were from early childhood to adult age to use his jaws to the same extent as his primitive ancestors used theirs they would develop, if not to the size of the ancestral jaw, certainly to an extent which would surprise many. I look forward, Sirs, to the time when "gymnastics of the jaws" shall be added to other forms of exercise. Meanwhile let us foster the instinct to bite hard things so clearly displayed by children and let us teach the laity to get rid of the "bogey" that the cracking of nuts—the best possible exercise for the jaws and teeth—is injurious to them.

I am, Sirs, yours faithfully,

Guilford-street, W.C., July 5th, 1892. HARRY CAMPBELL.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to remark in reference to Sir James Crichton-Browne's address on Tooth Culture, reported in your issue of July 2nd, that his statement that the "gastro-intestinal mucous membrane of the embryo" forms the "pulps and sacs of the teeth" is not quite correct. Embryologists are generally agreed that the mouth is no part of the primitive alimentary canal, but is formed by an involution of the parts of the face, the enamel being formed from the oral epithelium and epiblastic in origin; whilst the pulp and sac of the tooth, arising from the sub-mucous connective tissue of the mouth, are developed from the mesoblast. The gastro-intestinal mucous membrane is derived from the hypoblast. The teeth have long been known as dermal appendages.

I am, Sirs, yours obediently,

F. J. BENNETT, M.R.C.S., L.D.S.,

July 5th, 1892. Assistant Surgeon, Dental Hospital of London.

"SOME PRINCIPLES TO BE OBSERVED IN THE CLOSURE OF ABDOMINAL INCISIONS."

To the Editors of THE LANCET.

SIRS,—In your leading article upon the above subject (p. 33) you urge that too much attention cannot be paid to the closing of abdominal scars to prevent their subsequent yielding. In the first group of cases you refer to ordinary laparotomy wounds. In these there can be no doubt, if a firm cicatrix is to be ensured, care must be taken to unite all the divided tissues accurately, peritoneum to peritoneum, muscle to muscle, skin to skin. To do this I think it is only necessary to pass the sutures deeply through the parietes on each side of the wound, being careful that the needle properly transfixes each structure. If this rule is attended to there will be no occasion to use the buried sutures, which are tedious to apply and often cause after-trouble.

So important do I consider it to be to bring the muscular surface together that I have long taught the importance, in ordinary abdominal sections, of making the incision slightly to one side of the middle line, so as to ensure the division of the muscle in preference to dividing the tendinous linea alba, which rarely unites firmly, and I have frequently noticed by this latter incision that there is much more tendency to bulging of the cicatrix. I consider it also most essential in all cases to have a well-fitting belt applied before the patient is allowed to sit up. In the second series of cases you allude to—viz., those in which a permanent opening into a mucous canal is to be obtained—I am glad to find you condemn the practice of suturing the parietal peritoneum to the skin. For the last three or four years I have ceased to adopt this course, as I am convinced that it is not only an unnecessary waste of time, but that it is positively harmful, as the cicatrix thus formed is not nearly so firm as when the divided surface of the wound is brought into apposition with the visceral peritoneum. When speaking on this point at the medical societies I have always insisted upon this.[1] As to the means of fixing the viscus to the skin, this must vary according to circumstances, but in the greater number of cases I do not consider it necessary to stitch the visceral peritoneum to the skin. The circumstances which should influence one in this matter may briefly be considered: first, when it is desired to form a permanent fistulous opening, as in gastrostomy and jejunostomy; secondly, in some cases of intestinal obstruction, when it is desired only to drain the distended bowel for a short time to enable a patient to recover strength before a more radical operation is performed; and thirdly, in those cases in which an artificial anus has to be formed. In the first set of cases I am strongly in favour of slinging the stomach or intestine by means of four sutures, placed in the form of a parallelogram, through the serous and muscular coats, passing through the abdominal parietes, two sets on each side of the wound and then through an oval plate with a central opening, the threads being tied on the plate in pairs. Finally, the portion of the viscus enclosed in the parallelogram is drawn through the wound and central opening in the plate and fixed in position by transfixing it with a harelip pin. This operation was described by me at the Clinical Society's meeting and is also fully described in my work, "Surgical Diseases of the Stomach and Intestines." In the second series of cases the plan adopted and so well described by Mr. Greig Smith in his work on Abdominal Surgery should be adopted and in the third series it is not necessary to stitch the viscus to the wound. Every purpose may be attained by drawing a loop of intestine through the incisions in the parietes and passing a suture through the parietes on one side, then through the meso-colon in sigmoidostomy or lumbar colotomy, and finally through the parietes on the opposite side of the incision, the suture being fastened over a bone bar on each side. By adopting this plan there is no possibility of any portion of the omentum or small intestine being forced out of the wound alongside of the knuckle of intestine, the only other sutures necessary being one at each end of the incision, passing through the parietes in the ordinary manner.

I am, Sirs, yours faithfully,

FREDK. BOWREMAN JESSETT, F.R.C.S.

Buckingham Palace Mansions, July 5th, 1892.

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[1] THE LANCET, vol. ii. 1891, p. 987.

"RHEUMATOID ARTHRITIS AND RHEUMATIC ARTHRITIS."

To the Editors of THE LANCET.

SIRS,—In referring to Dr. King's letter on this subject in your issue of June 11th, which professes to deal directly with certain statements of mine occurring in a paper read at the Royal Medical and Chirurgical Society, permit me to examine some of his arguments. At the very outset he destroys the sense of the whole context of one portion of my remarks by a misquotation—namely, by the omission of the word "hereditary" in the passage "it [rheumatoid arthritis] is a constitutional disease of debility, invariably having a *hereditary* history of phthisis or gout or both." I spoke of rheumatoid arthritis "occurring in cases with a strong hereditary history of gout, phthisis or struma," using the word struma to indicate tuberculous affection of any organ or part except the lung. There are so many symptoms present, either acquired or hereditary, sufficient to account for the debility that to investigate and ultimately prove the presence of the bacillus in these would merely corroborate still further my opinions, whereas its absence, while perhaps being somewhat disappointing in cases apparently markedly tuberculous, would certainly not shake my opinion of a wasting and debilitating disease, if certain clinical proofs were not wanting. Dr. King further thinks that acute rheumatism should have greater prominence as a cause of rheumatoid arthritis. Why "comic" that in chronic rheumatic arthritis the young seldom suffer? Does Dr. King think a patient must be old before he can have a chronic complaint? Lastly, in his treatment of giving salicylates in rheumatoid cases, when suffering from increased pain and swelling, it would be interesting to know whether the rheumatic element was conspicuously absent.

I am, Sirs, yours faithfully,

HUGH LANE,
Surgeon to the Royal Mineral Water Hospital, Bath; Hon. Med. Off. to the Royal United Hospital, Bath.

July 4th, 1892.

DEATH UNDER CHLOROFORM.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of May 21st Dr. Colvin Smith records a death under chloroform which affords a striking example of the danger of pulse feeling in chloroform administration. The patient was breathing well, but, owing probably to the pharynx being full of blood, was rather cyanosed. Although cyanosed he was supposed to have fainted. Simply because the pulse could not be felt ether was injected, and "other steps were at once taken to stimulate the heart." It is clear from Dr. Colvin Smith's account of the case that the heart was refusing to convey any more chloroform to the brain at this time—i.e., while the cyanosis lasted. If the patient had only been left alone, and the safeguard action of the vagus had not been frustrated by the injection of ether, the stoppage of the heart would have saved his life.

I am, Sirs, yours obediently,

Hyderabad, June 14th, 1892. EDWARD LAWRIE.

"THE MEDICAL PROFESSION IN PARLIAMENT."

To the Editors of THE LANCET.

SIRS,—*Apropos* of the first leading article in THE LANCET of June 25th I enclose the following extract from Col. Lowry's address to the electors of Trinity College, Dublin:—"Next in point of number are the medical graduates. I have always felt that the medical profession has a special claim upon the representatives of the University; for, unlike the legal profession, very few of its members have seats in the House of Commons. It is within my own knowledge that the dispensary medical officers in Ireland have long had reason to complain of their position in regard to both their duties and their pensions. I shall, if elected, give my special attention to the interests of this large and important body." The lawyers want to make a convenience of the electors by making the University a stepping-stone to the bench. Every University doctor should support the advocates of his own profession, as I do, though I am afraid some of them support the lawyers. I am, Sirs, yours faithfully,

THOMAS MOORE SUNTER, M.D. T.C.D., M.D. Oxon.

Spring grove, Isleworth, July 4th, 1892.

"STEELE *v.* SAVORY" FUND.

To the Editors of THE LANCET.

SIRS,—We beg to forward herewith a third list of donations and subscriptions to the "Steele *v.* Savory" fund, and in doing so you will permit us to make known through THE LANCET that the Members of the College of the United Services, the Indian Medical Service in particular, have evinced throughout great interest in the justice of the claims put forward by the Association of Members. Surgeon-Lieutenant-Colonel Calthrop, of Mian Mir, Punjab, Bengal Presidency, has issued an appeal and undertaken to receive subscriptions on behalf of the fund and the first instalment was received by the last mail. Surgeon-Lieutenant-Colonel North writes: "I gladly enclose my guinea, and if the sovereign had only cost Rs10, as it should with us, instead of Rs16, I would gladly have sent two, but I shall be happy to contribute further in the righteous cause of the members of the College, and pray communicate my best thanks to the plaintiffs who have been fighting our battle."

We remain, Sirs, faithfully yours,

JABEZ HOGG,
W. G. DICKINSON, } Joint Hon. Secs.

July 6th, 1892.

THIRD LIST OF SUBSCRIPTIONS.

	£	s.	d.
Deputy-Surgeon-General McKellar (to make up his donation to £50)	34	5	0
Anonymous	5	0	0
A. L. H.	3	3	0
Chas. Eaton Baker	2	0	0
Maurice E. Ling	1	17	6
Dr. G. H. Batterbury (Hon. Loc. Sec.)	1	10	0
Dr. Jacob Pickett	1	10	0
Andrew Fuller	1	10	0
Richard Emmett	1	10	0
F. A. Gray	1	10	0
G. W. Graham	1	10	0
Chas. Williams, F.R.C.S.	1	1	0
Rev. R. J. Simpson	1	1	0
J. M. King	1	1	0
T. J. Merriman	1	1	0
Dr. Braithwaite Rogers	1	1	0
John Prince	1	1	0
Alfred Freer	1	1	0
Foster MacGeagh	1	1	0
T. Craddock Palmer	1	1	0
E. H. Beaman	1	1	0
Arthur R. Hopper	1	1	0
T. P. Purvis	1	1	0
Surgeon-Lieut.-Colonel Calthrop	1	1	0
Surgeon-Lieut.-Colonel Temple	1	1	0
Surgeon-Lieut.-Colonel J. North	1	1	0
Surgeon-Major Harwood	1	1	0
G. J. Muriel	1	1	0
William Marsden	1	0	0
Dr. E. R. Tenison	1	0	0
Thomas Aspinall	0	10	6
Dr. Clewen Griffith	0	10	6
William Hawkins	0	10	0
Dr. Bucknell	0	10	0
Dr. Cox	0	10	0

Donations may be forwarded to the treasurer or paid direct to Dr. Danford Thomas, Park Lodge, Paddington, crossed "Steele *v.* Savory" Fund, the National Bank, Bayswater, W.

MEDICAL DEFENCE UNION, LIMITED.

To the Editors of THE LANCET.

SIRS,—As there appears to exist some misunderstanding as to the position and progress of the Medical Defence Union, Limited, will you allow us to give the following particulars, which will enable the profession to properly judge as to the stability of the Company, its capacity for doing the work of medical defence and for meeting the wants of its members:—

Number of Members.

1888.	1889.	1890.	1891.	1892 to June.
442	834	1446	1828	2366

Amount of Guarantee Fund.

1888.	1889.	1890.	1891.	1892 to June.
£538	£1249	£2173	£2826	£3489

The Executive Council of the Union is composed of an equal number of London and provincial members and the meetings are generally held alternately in London and Birmingham. Members of the Union are drawn from the metropolis in large numbers, as well as from all parts of the United Kingdom. One of the secretaries resides in London, one in the Midlands, and in this way cases of emergency can be dealt with with the utmost promptitude and despatch and personal advice given to members resident in London when required.

We are, Sirs, your obedient servants,

LESLIE PHILLIPS, M.D.,
A. G. BATEMAN, M.B., } Hon. Secs. Medical Defence Union.

July 4th, 1892.

GREAT YARMOUTH HOSPITAL.—The annual report for the past year shows that 332 in-patients and 3857 out-patients were treated during the twelve months. The year's income had more than covered the expenditure, leaving in hand a surplus of £220 19*s.* 11*d.* The invested funds amount to £16,120 6*s.* 7*d.*

THE FRENCH WORKMEN'S SANITARY CONGRESS.

(FROM OUR SPECIAL CORRESPONDENT.)

ON the afternoon of July 3rd the Congress commenced its labours, which during the first meeting were for the most part of a formal character. The credentials of the delegates had to be verified and the various commissioners elected. M. Prudent Dervillier, a member of the Paris Municipal Council, was appointed chairman. In opening the proceedings he explained that the general programme of the Possibilist Party had been debated at the ten preceding National Congresses and was now so well established and understood that the time had come to deal with practical questions instead of abstract theories. It was the duty of the working classes to study earnestly even dry and technical questions, for on their votes depended the solution of these problems. During the present Congress questions relating to the health of the working classes had been selected for debate.

Workmen, it was true, did not possess the technical knowledge required to deal with these problems, but they had appealed to the Professors of the Faculty of Medicine, who had acquired this knowledge. These eminent men of science were separated from the working classes by many material and social considerations, but they were at one with the working class in seeking to elucidate scientific truths independently of all class interests. As Possibilists the organisers of the Congress wanted to profit by the knowledge of these scientific truths, to demand in the name of science, of humanity, of public health, such laws as shall guarantee to the working classes pure unadulterated food and wholesome dwellings. The workers would then have more intellectual and physical strength; they would then be better able to grapple with those great social and economical problems that went to the root of all the evils from which society suffered.

M. A. Lavy, Deputy for Montmartre and general secretary for the Congress, read the correspondence, showing how widely the object of the Congress had been approved. A few reactionary papers had blamed the workmen for abandoning their scarecrow revolutionary policy. They had abandoned none of their aspirations, but wanted to render workmen fitted for a better future by improving the material conditions under which they now lived.

Some discussion ensued as to whether delegates from the Society of Veterinary Surgeons and from the philotechnic associations should be admitted. These delegates had important communications to make in respect to the teaching of hygiene and the control of the supply of meat. It was ultimately decided that as the delegates did not represent labour organisations they would be welcomed as guests and might submit communications, but could not assist as delegates. As instructors and as guests the representatives of all scientific societies were most welcome—as delegates they could not be accepted for they were not labour representatives.

On the second day M. Lavy, Deputy, was elected chairman and announced that the municipality of Rochefort-sur-Mer had voted a subvention to send delegates, and that delegates had arrived from St. Étienne and from Lyons. He had also to welcome Mr. James Holmes of the Leicester Trades Council. In reply Mr. James Holmes explained that the workers of England took great interest in the Congress and would have sent a numerous deputation but for the general elections. If the first necessity was to obtain good wages the second was to be able to lay out those wages advantageously. The Congress by dealing with the question of the adulteration of food would help to solve this latter part of the labour problem. Some discussion arose as to whether the delegates of a society of cooks could be admitted, because two employers of labour were members of that society. This association is called l'Académie de Cuisine, a title which amused and found favour with the Congress, and it was decided that, as the immense majority of the members were workers, they should be allowed to send delegates to represent their "art" in the Congress.

The discussion was now opened on the first question—the food of the working classes. M. Roland, representing labour organisations of the Port de Flandres districts, said they did not believe much would be done to better the quality of the food workers were in the habit of buying. Here and there individual tradesmen would endeavour to act honestly, but the intervention of the State was much preferable to individual effort. The scientific lectures delivered in preparation of the Congress proved that many workers did not earn enough to buy the amount and quality of food necessary to keep them in health. Some suggested total abstinence as a remedy, though it had been shown how often the drinking of water was the cause of typhoid fever. Others proposed vegetarianism, while some employers of labour had gone so far as to suggest that the fasting experiments of Succi might indicate how working-men could live cheaply. Against all these proposals he protested energetically and urged that the real remedy rested in the establishment of a minimum rate of wages based on scientific calculations as to what was necessary to keep workmen in good health. Official science had condemned vegetarianism and total abstinence. But, even if the workmen had sufficient wages to procure meat diet and wine, what was to prevent them from being poisoned by, for instance, the bad alcohols added to the cheap wines? He deeply regretted that the French Chambers had not voted in favour of the proposal to create a State monopoly in alcohol. He thought that the municipalities might open depôts for the necessities of life—meat, bread, &c.—and, as there would be no trade interest to serve in adulterating these articles when they were sold by the elected representatives of the community to the community, there would then be a fair prospect of getting wholesome food.

The delegate of the third arrondissement of Paris complained of the facilities existing for the practice of adulteration. Why was theft of this description so easy? Bread contained 40 to 42 per cent. of water when it should not contain more than 30 to 32 per cent. Then the baker also succeeded by various manœuvres in giving light weight. The workers had no practical means of preventing this daily robbery of their class. Butchers gained 125 per cent. per annum on the capital they engaged in their trade; and competition, the panacea for all evils, according to the teaching of the orthodox economists, had not improved the situation. The number of butchers and bakers was daily increasing, but the prices continue to rise. The real competition wanted was that of municipal butcheries and bakeries who would sell in the interests of the public and not of trade.

Dr. Paul Brousse, Municipal Councillor and representative of the Epinette district, discussed the qualities of the food required so as to maintain the human equilibrium and showed what was proved to be chemically necessary. Money would not always secure this, and even those who could afford luxuries might be underfed or poisoned through the bad quality of what they bought. Pastry might be coloured with copper or arsenic and bread poisoned with the lead coming from the paint adhering to the wood of old houses sometimes used to heat the ovens. Competition had made matters worse. Bakers spent in shop windows and ornamentations to attract customers what they ought to spend in the flour for their bread. People had to pay for the big shops, the flaring gaslights and the big advertisements, and thus did not get their money's worth in food. He agreed with the previous speakers that they wanted the establishment of public services for the necessities of life. But it would not be wise to rest, as it were, hypnotised by this grand conception. Pending the municipalisation of those trades on which public health depended—water, bread, meat, &c.—they must endeavour to obtain stricter laws against adulteration. Alphonse Karr had wittily remarked that if he were to rob his grocer he would certainly be sent to prison, but if he proved that his grocer had robbed him by selling him an adulterated article the grocer would only be fined. If in his indignation he went and killed the grocer he would be arrested, convicted of murder and guillotined, but if he was killed by the grocer selling him an article adulterated with poison the grocer would again escape with a fine. In the Middle Ages, Dr. Brousse urged, adulteration was classed with the coinage of false money, and the culprits were in both instances hanged. Doubtless the municipal analytical laboratory would help to moralise trade, but he suggested that articles of food—such as for instance a cask of wine—should be accompanied by a sort of bill of health, or passport, on which its history should be recorded, so that as it changed hands it might be seen by whom its original quality and character had been altered.

Madame Bertier pleaded for good food for workwomen. It was a deplorable fact that the majority of the workwomen of

Paris were anæmic. How could they give birth to healthy children? Where would France find the soldiers for its future battles? A few workwomen earn enough—they are the exception, and the workwomen who were strong and well fed had such personal charms as enabled them to obtain money from other sources than labour. Even when a workwoman, in consequence of very exceptional taste or skill, could earn enough to buy wholesome food she had not time remaining to cook it properly. Had the underpaid and underfed workwomen of Paris the right to be mothers when they had neither the time to tend their children nor the health to bear them? It was now proposed to enforce rest on Sunday, but this meant no rest for women. Early on Sunday morning the women had to go to the washhouse with the week's dirty linen; then they had to come home and cook and the afternoon was spent in mending the clothes. Sunday was often the hardest day of the week. But there were no two measures in nature—women wanted food and leisure as well as men. She urged that women ought not to compete with men by doing the same work for less wages. A law should be passed making it illegal to employ any woman for less than half a franc per hour. Women might then work three hours in the morning, three hours in the afternoon, gain three francs (or 2*s.* 5*d.*) per day, and yet have some time remaining to attend to domestic duties. This Madame Bertier thought should be the very lowest scale of wages the law should sanction.

A communication from M. Tessignier and coming from the Society of Veterinary Surgeons was then read. M. Tessignier insisted on the quality of meat. This was more important than the quantity. In France the soldier was allowed 300 grammes of meat. This was not enough and yet the workman often did not get as much. Then it was bad meat—not absolutely unwholesome, but flesh of old, tired cattle—meat that loaded and embarrassed the stomach without strengthening the system. The meat might be wholesome when it came from the slaughter-house, but it was often unwholesome by the time it was sold, Horse was sold for beef, dog for mutton; accidents and illness resulted, but attracted no attention unless they occurred on a wide scale. Then measures were taken, but they were only temporary in their effect. Yet the workman's only capital was his health. Such laws as existed for the inspection of meat were aimed against great epidemics rather than against evils that occurred but in detail. Nor did the Legislature define the meaning of the word "corrupt" and the verdicts given were most contradictory and uncertain. What is condemned in one town is allowed in another. Municipal by-laws, though often the result of very serious study, are obscure and incomplete. As the Congress represented the working classes, who were the principal sufferers, it must insist on better and more clearly defined laws. A better watch must be kept over private slaughter-houses. In these small places horse was easily substituted for beef and dog for mutton. In all towns with more than 5000 inhabitants private slaughter-houses should be abolished and a public slaughter-house erected. Then there should be a fully qualified veterinary surgeon attached to each public slaughter-house. At present inspectors of slaughter-houses were appointed in consequence of their political opinions and with no regard to their technical knowledge. Some of the meat which is condemned in Paris is forthwith sent to provincial towns, where the inspection is less severe. It is also very difficult to detect bad meat when the worst parts have been previously and carefully removed. It is therefore necessary that there should be a large staff of thoroughly qualified veterinary inspectors and that the law affecting the control of the meat-supply should be strengthened, more clearly defined and rendered uniform.

The Congress then adjourned, as it was close upon midnight.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Medical School.

THE union of Queen's and Mason Colleges for the purposes of medical teaching is now an accomplished fact and the result is looked forward to with hope and confidence in the future. The gain will undoubtedly be to the students from every point of view, for the amalgamation will produce a solid and substantial basis which must effect strength. At a meeting of the Council, held on the 5th inst., the following three vacancies in the faculty of medicine were filled up: To the Professorship of Medicine, Dr. R. Saundby; to Ophthalmology, Mr. Priestley Smith; and to Dental Surgery and Pathology, Mr. F. E. Huxley. These appointments will give general satisfaction.

Scalding Fatality.

"What dire events from trivial causes spring" is probably no more forcibly exemplified than in the cases of burns and scalds. Oftentimes miners have been known to walk home after being badly burnt and to die very soon afterwards. With children, too, it is well known what a small amount of burning is sufficient to place their lives in great danger. An instance lately happened to illustrate this in the case of a woman on whom some hot water was thrown by another woman. The patient walked to the General Hospital and was detained there. After a few weeks erysipelas set in; the patient is now dead, and her assailant stands charged with manslaughter.

White Cross Society.

A meeting of this Society was held in the Town Hall on June 30th and was well attended; the Bishop of Wakefield occupied the chair. Among the speakers was Dr. Malins. A vigorous effort is being made to extend the influence of this movement in the town. No nobler objects of a social kind could be aimed at than those this Society seeks to enforce—greater purity among men, a chivalrous respect for womanhood, and a higher tone of public opinion. The want of these attributes in society of the present day is an obvious fact to all reflecting persons, and any attempt to remedy such a condition of affairs will be welcomed with all sincerity.

The Society for the Prevention of Cruelty to Children.

This Society is seeking to enlist public support by holding meetings in and around the town, where sympathy in its work and efforts is earnestly solicited. The records of our criminal courts show the prevalence of the evils and dangers attending the growth of the young in our community. With regard to the protection of infants and children there is still abundant room for progress and the efforts made by this Society cannot fail to be productive of good.

July 6th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital Saturday in Bootle.

THE institution of Hospital Saturday has been found to be a most important adjuvant of Hospital Sunday. Many persons are prevented by the nature of their avocations from attending church or chapel, while many probably do not attend though quite able to do so. In Bootle last year an experiment was made of a somewhat original idea. Boxes resembling hospital cots were placed in the streets in conspicuous localities; these realised a sum of £227. This year the experiment has been repeated with even better results, £308 having been received. This happy thought seems worthy of adoption elsewhere.

The Candidature of Dr. B. W. Richardson.

It is much to be regretted that Dr. B. W. Richardson, who would have been such a valuable acquisition to the House of Commons, was not induced to try for some seat which he was more likely to win. His candidature for Walton was from the very first hopeless, but there must be elsewhere in the country seats where his political and other views would be more acceptable, and it is to be hoped that we may yet find his name added to those of the other gentlemen who will represent the medical profession in the new House of Commons.

The Water-supply of Liverpool.

On the 14th inst. the Duke of Connaught and Strathearn will inaugurate a most important event to Liverpool—the opening of the new water-supply from Vyrnwy Lake. At the first census in 1831 the population of Liverpool was considerably less than half of what it is now and local reservoirs sufficed for the water-supply. But for years past these have been wholly inadequate and the residents have been put to most serious inconvenience by the authorities reducing the water-supply to a few hours a day of service sometimes and frequently to half-service. It is very satisfactory and very creditable to the sanitary authorities that it did not lead to an epidemic of

typhoid fever. The constant service is on now and we have every reason to hope that it will be continued in future without any break. The formation of the aqueduct for conveying the water a distance of seventy-seven miles from the lake to the heart of Liverpool has been a great engineering feat, comprising the formation of tunnels, reservoirs, and water towers along its course. The carrying of the water under the Mersey was the most formidable part of all, requiring almost superhuman efforts to overcome the difficulties. The work has been costly, of course, but the money will be well spent in providing the city with an abundant and never-failing supply of good water.

July 6th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The Newcastle Royal Infirmary.

A PUBLIC meeting in response to a requisition of citizens was held last week under the presidency of the Mayor to consider the proposal of the house committee to erect new buildings to perpetuate the memory of the late Dr. Bruce, the eminent antiquary and philanthropist of this city. It was stated at the meeting that a new infirmary would probably cost something like £100,000 and that under the existing depressed state of trade it would be hardly wise at present to ask for such a sum. At the same time a new infirmary was an admitted want, and the feeling of the meeting was that a commencement might be made in the way of building a new wing or pavilion to be called the "Bruce wing." This would, it was stated, cost from £5000 to £7000. Dr. Philipson, in seconding the motion for the erection of the proposed Bruce wing, stated that the present building was in parts over 150 years old; and when they reflected on the changes that had taken place in the institution from time to time he thought it would be felt that the time had come when very decided action should be taken with respect to the infirmary if its position and prestige were to be maintained. It was also resolved to erect the new infirmary, if it can be so called, upon the present site, which in the opinion of many is open to serious objections; indeed, our medical officer of health was hardly, I think, satisfied with the existing space. Mr. Alderman Newton, surgeon, raised the question as to the allocation of the students' fees between the teachers and the treasurer of the infirmary, but the point was ruled out of order by the Mayor. It is right to mention, as regards the internal economy of the infirmary, that there is a growing feeling here among the profession that some reforms are necessary in the interests of subscribers, the profession, and indeed of the public. For instance, it is thought that relief is given far too readily to casuals well able to pay, that the honorary medical appointments are too exclusively held in connexion with the medical college and that the said appointments are held for too long a period. There are many other points giving rise to discontent, which, however, may be referred to at another time.

Raby Castle Sanitation.

The *Northern Echo* states that Lord and Lady Barnard, who only lately succeeded to and took possession of Raby Castle, will not resume residence there again for some months, until the sanitation of the castle is thoroughly overhauled. The castle is a very ancient pile; some few years ago its condition was a subject of consideration by the sanitary authority.

The Bequests of the late Dr. G. Y. Heath of Newcastle.

The *Newcastle Journal*, in reference to the munificent bequests of the late Dr. Heath (first announced in these "Notes" a few weeks ago), states that the Royal Kepier Grammar School has been also favoured to the extent of about £5000 to found a medical scholarship from the school to the Newcastle College of Medicine. The Kepier Grammar School at Houghton-le-Spring, near Sunderland, is so named from the fact that in 1574 a Mr. John Heath, in conjunction with the then rector, the celebrated Bernard Gilpin, gave certain tithes which formerly belonged to Kepier Priory near Durham for the foundation and maintenance of the school. It should be stated that the will of the late Dr. Heath, if proved, has not, at all events, yet been made public, so that there may be other educational surprises in store.

Presentations.

Dr. Carlyle, Langholm, has been publicly presented with his portrait (painted by Sir George Reid, President of the Royal Scottish Academy), the occasion being the completion of fifty years' medical practice in the town.—Dr. Smith of Ryton has been presented by his pupils of the ambulance class with a handsome hall clock.—Dr. Wm. Slater of Newcastle has also received a presentation.—Dr. A. D. Macintyre of Consett has been the recipient of a testimonial, subscribed for by the railway servants' ambulance class at Consett and Blackhill.

Newcastle-on-Tyne, July 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Complimentary Dinner to Mr. Charles Smith, of Kinnairdy, Banff.

ON July 2nd Mr. Charles Smith, M.R.C.S., was entertained at dinner by his professional brethren in the Palace Hotel, Aberdeen, on the occasion of his celebrating his jubilee as a medical practitioner. Over sixty gentlemen sat down under the chairmanship of Dr. Angus Fraser of Aberdeen. The toast of the evening, "The Health of the Guest," was enthusiastically pledged, and Mr. Smith in reply gave a highly interesting account of medical practice fifty years ago and its gradual development and improvement. A few days previously Mr. Smith was met by the leading inhabitants of the district where he has so long and ably conducted practice and was presented with a very handsome testimonial.

Health of Aberdeen.

The state of health last week was very satisfactory, except for an epidemic of measles at Torry, one of the fisher quarters of the town. Scarlet fever is on the decrease, and diphtheria is represented by two cases, while there are no cases of puerperal or typhus fever.

July 6th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Dublin University Tercentenary.

DUBLIN is very busy this week on account of the celebration of the tercentenary of Trinity College. The first of the festivities was commenced on Monday evening by Dr. Kidd, President of the Royal Academy of Medicine, and Mrs. Kidd giving an "at home" at their residence in Merrion-square. A very large number of guests were present, who spent a very enjoyable evening. Music added to the attractions of the evening, the principal vocalist being Mr. Barton McGuckin.

Royal College of Surgeons.

The Honorary Fellowship of the College will be conferred on the 7th inst. upon the following gentlemen—viz., Thomas Bryant, President of the English College of Surgeons; John Shaw Billings, Surgeon-General, United States Army; Professor Adolphus Gusserow, Berlin; and Hermann Snellen, Rector Magnificus, University of Utrecht. A meeting of the College will be held on July 11th, convened by requisition, to take into consideration the whole question of advertising and to decide, if possible, what is within the limits of professional propriety. His Excellency the Lord-Lieutenant will on Friday, the 8th inst., unveil the memorial bust of the late Dr. Robert McDonnell, the eminent surgeon and physiologist, and former president of the College.

Irish Medical Schools and Graduates' Association.

The annual dinner of the Association was held recently in the Royal Marine Hotel, Kingstown, the chair being occupied by Dr. Mapother, of London, in the absence of the president, Mr. Dick, C.B., Director-General R.N. The chairman, in proposing the toast of the guests, specially alluded to Professor Hashagen and Mr. Bruce Joy, the eminent sculptor. Mr. Bruce Joy, he said, was the son of one of the most popular Fellows of the College of Physicians and the sculptor of the bust of their beloved and lately deceased colleague, the great Robert McDonnell. The chairman, in giving the toast of "The Irish Medical Schools and Graduates' Association," mentioned that the Society could now boast a membership of 700, and concluded by alluding to the grievances of Irish graduates in regard to certain hospital appointments, which were, however, gradually being removed. The toast

of the chairman (Dr. Mapother) by Sir Charles Cameron terminated the proceedings.

Health of Ireland: March Quarter.

The births registered amounted to 26,978 being 1·2 under the average for the corresponding rate of the ten years 1882–91. The deaths were 30,660, equal to 26·4, and the highest rate recorded for any quarter since registration was established (in 1864), and is 22 per cent. in excess of the average rate for the March quarter of the past ten years. This increase in the mortality principally occurred among persons of advanced ages. The high mortality was due to the prevalence of influenza and pulmonary affections and to the severity of the weather. Measles and whooping-cough were prevalent in the Dublin and Belfast districts, but there was a considerable falling off in the deaths from typhoid fever in the Dublin registration district. It may be mentioned that the Dublin Corporation have agreed to schedule whooping-cough and measles among the list of infectious diseases to be notified.

Report on Dublin Hospitals.

The thirty-fourth annual report of the Board of Superintendence of the Dublin hospitals has been presented to the Governor of Ireland. The Board have visited the hospitals to examine into their condition and to ascertain if proper care were bestowed on ventilation and on the proportion of inmates to space. They report that the nursing organisation is now generally efficient and have suggested that due provision should be made for the nurses' comforts as far as possible and that their food-supply should be carefully attended to. They also express a hope that an institution connected with the hospitals should be endowed and equipped for pathological, chemical and bacteriological research. They state that such an establishment is urgently needed in the interests of medical science, for medico-legal investigations and for the benefit of the community at large.

July 5th, 1892.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Cholerine Epidemic.

SOME weeks ago I had occasion to refer to an outbreak of cholera nostras at Nanterre, a western suburb of Paris. The epidemic has since extended its ravages to adjoining suburbs situated in the west and north-west of the metropolis and a certain number of cases have been met with in Paris itself. From April 5th (the date at which it commenced) to June 25th the epidemic has been fatal in 159 instances. That the number of persons attacked has not been very considerable is apparent from the heavy mortality reported from such centres as Nanterre (44 deaths out of 55 cases) and Argenteuil (13 out of 19). In my previous communication I promised to send you the results of the bacteriological examination of the organs of the Nanterrois who succumbed at the Hôpital Beaujon. These researches, conducted by M. Netter, a very competent authority, are now completed, and it appears that a bacillus discovered in the intestines presented great similarity to the micro-organism of true cholera. Both the Conseil d'Hygiène and the Comité Consultatif d'Hygiène Publique have investigated the matter and these bodies are unanimous in regarding the consumption of Seine water as the efficient factor in the production of the outbreak. They strongly urge the authorities to submit this dangerous stuff—Seine water—to the process of boiling previously to supplying it to those of their customers who are condemned to the ordeal of consuming it. The excessive heat which has lately prevailed has doubtless stimulated the growth and multiplication of the numerous micro-organisms contained in water the periodical distribution of which in Paris is a crying scandal and a reproach to those responsible for the physical well-being of the inhabitants of *la ville lumière*. Meanwhile I think I am justified in stating that the outbreak in question is *not* cholera morbus, and that intending visitors to this gay centre of pleasure need be under no apprehension of contracting the severe form of diarrhœa which is always more or less in our midst at this time of year, provided they refrain from drinking unboiled and unfiltered Seine water.

Recrudescence of Typhoid Fever in Paris.

L'eau de Seine and enteric fever are old and staunch allies, and the turning-on of the water is equivalent to the turning-on of the disease the existence of which is a disgrace to a Haussmannised city like Paris. Is it to be wondered at then that cases of typhoid fever should be beginning to pour into the hospitals in increasing numbers? Dr. Monod reports to the Comité Consultatif d'Hygiène Publique that the number of persons with this disease admitted into the Paris hospitals from June 24th to June 30th was ninety-five. On the morning of June 24th there were under treatment in the wards of our hospitals 185 typhoid fever patients; on the evening of the 30th ult. these figures had increased to 235. If these poor sufferers were under treatment for wounds inflicted by roughs in the streets loud demands would soon be forthcoming for the repression of such lawlessness. But when death and disease are distributed through the medium of pipes amongst our population the dire results are accepted as a matter of course and no outcry is emitted by the public against such a scandalous *régime*. The patient long suffering of the Paris public is simply beyond British comprehension.

Inter-University Courtesies.

At the usual monthly meeting, held last week at the Sorbonne, of the General Council of the Paris Faculties it was decided to present a congratulatory address to the University of Dublin on the occasion of the tercentenary festivities which are being held this week in the Irish capital. Our distinguished *confrère*, Professor Lannelongue, was delegated to speak at the banquet in the name of the Paris University. Professor Lannelongue's visit to Dublin will doubtless have the effect of further interesting the hospital surgeons of that city in his sclerogenic method of dealing with tuberculous lesions.

An Anti-Cancer League.

In March last Professor Verneuil suggested to his colleague Professor Duplay the idea of forming an association the *raison d'être* of which should be the elucidation of the real nature of carcinoma. The idea has now been acted upon, and a committee has been appointed to further the development of this deserving enterprise. The committee includes such well-known workers as Duplay, Trasbot (of the Veterinary School of Alfort), Metchnikoff (of the Pasteur Institute), Reclus, Ricard and Brault, with M. Masson (the publisher) as treasurer. These gentlemen have just issued an address to the public exposing therein the objects of the League and asking for subscriptions in aid of researches. An appeal for collaboration is made to pathologists, clinicians, histologists, microbiologists, veterinary practitioners and even geographical explorers. Congresses will be periodically held in order to discuss the progress made in bringing to light any information concerning cancer, a journal will be published as the organ of the League, and, when funds permit, prizes will be offered for any discovery bearing on the subject. I can only wish the enterprise success in its arduous mission.

Paris, July 6th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Twentieth Congress of German Medical Men.

THE twentieth Congress of German medical men met at Leipzig on the 27th ult. It was attended by 104 delegates, representing 149 societies. Dr. Graf of Elberfeld presided. Dr. Busch of Krefeld reported the proposals of the business committee regarding the relation of medical men to trades unions. At the second meeting of the Congress Dr. Branser of Ratisbon reported on the relation of medical men to the offices for the insurance of the aged and infirm. The well-known Berlin gynæcologist, Dr. Martin, proposed that the business committee of the associated societies of medical men should be instructed to describe the circumstances of the medical profession without reserve in the papers every year at the time when the pupils of high schools are examined for the certificate which admits them to the universities, and urgently to warn all those who have no special aptitude for study, particularly those who look to medicine as a means of earning a livelihood. This proposal was rejected by a majority of one, and the declaration that, considering the difficult circumstances of the medical profession, the increase of the number of medical men is out of all proportion to the increase of the population, was adopted in its stead.

Cholera.

The Government organ, the *North German Gazette*, writes:

"In order to prevent misunderstandings or alarming conclusions, to which the news of measures to ward off cholera may lead, it may be stated that there is no reason for uneasiness either for the present or for the future so far as it can be foreseen, because our frontiers are separated by vast spaces from the region where cholera is now raging, and the pestilence has not shown the slightest tendency to spread in the direction of central Europe. Moreover, the sanitary measures in question are of old date and so arranged and prepared for that they can be completely enforced the moment they become necessary. The danger of an unobserved introduction and spread of the pestilential germ on German soil therefore seems absolutely excluded."

Dr. Snell.

The eminent alienist, Dr. Snell, director of the Hildesheim Asylum, near Hanover, died on the 12th ult., aged seventy-four. He was the first in Germany to use agriculture as an element in the treatment of insanity. He is succeeded by his assistant, Dr. Gerstenberg.

Professor Anton Biermer.

Professor Biermer, till lately director of the Medical Clinic in Berlin, died the other day at Schöneberg, near Berlin. He wrote on sputum, leucocythæmia, the anatomy of bronchiectasis, pneumothorax, the diseases of the bronchi and of the parenchyma of the lungs, asthma bronchiale, typhus abdominalis, the causes of epidemics, especially cholera, metallic tinkling &c. He taught at Würzburg, Berne, Zurich and Breslau. His successor in Breslau is Professor Kast, formerly of Hamburg.

Ozone and Influenza.

At the general assembly of the German Meteorological Society, which met at Brunswick last month, Dr. Eydam of that city communicated that he had measured the ozone of the air during the last twelve years, latterly in and near Brunswick. He had found that at the time of the recent influenza epidemics the amount of ozone in the air was extremely small, hardly 10 per cent. of the normal amount.

Miscellaneous News.

The number of medical students in Berlin University this half year is 1448.

Professor Schaer of Zurich has been called to succeed Professor Flückiger in the chair of Pharmaceutics in Strasburg.

Dr. Fritz Moritz has been promoted to the rank of professor and appointed director of the medical consulting clinic of Munich University.

Professor Fischer of Würzburg has accepted a call to Berlin.

Dr. August Haupt has published a book entitled "Soden am Taunus" (Soden at the Foot of the Taunus Mountains), giving full information about the climate and the waters of that beautiful watering-place.

The Royal Medical Academy of Belgium has elected Professor Du Bois-Reymond of Berlin a corresponding member.

The Society of Prussian Medical Officials will hold its general assembly in the Langenbeck House here on September 5th and 6th.

A committee of scientific men of all nations, including Du Bois-Reymond, Helmholtz, Waldeyer, Häckel and Billroth, has published an appeal for contributions to a monument of Ernst von Brücke in Vienna. Contributions may be sent to Professor Exner, 17, Schwarzspanier Strasse, Vienna, till the end of this month.

The magistrates of Berlin have ordered that all articles sent for disinfection to the municipal establishment for that purpose must be packed in strong chests lined inside with sheet-metal.

Berlin, July 5th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Visit of the Khedive to the Government Hospital.

ON May 19th the young Khedive paid his first visit to Kasr-el-Aini Hospital, devoting an hour and a half to careful and intelligent inspection. He talked with some of the patients in Arabic, explained some new inventions to his aides-de-camp in Turkish and conversed freely with members of the hospital staff in English, French and German. He was much interested in certain operation cases, such as tracheotomy and gastrostomy, in the arrangements for disinfecting and washing the private clothes of patients, in an excellent machine for sterilising milk, in a German bandage cutter and roller, which allows 5000 bandages to be made daily by one man for the provincial hospitals, and in the new bacteriological laboratory just opened under Dr. Kaufmann's care. His Highness was also interested in seeing cultures of cholera, diphtheria, &c., and in hearing of experiments on rabbits to secure immunity from tetanus. He has since spoken in the highest terms of appreciation of the work done by the English there.

Cairo Drainage Scheme.

It may be remembered that in 1889 the Egyptian Government considered its finances sufficiently satisfactory to be able to entertain the cost of draining the capital, thus doing away with some of the existing cesspools and endeavouring to reduce the rate of mortality among the natives. Accordingly Mr. Baldwin Latham was invited to visit Cairo, and he prepared here a carefully worked out scheme. But Egypt has no power to spend her own money upon any new work without the unanimous consent of six Powers, and France at once, though standing alone, refused the necessary permission. After many ineffectual attempts to overcome this difficulty, France eventually agreed that Cairo might spend half the octroi tax of the city, provided that a Commission appointed by England, France, and Germany should unanimously decide upon a good scheme. The French further insisted that if the three engineers were not unanimous a Belgian arbitrator should be appointed. In February last the international trio met in Cairo. They were Mr. Law, chiefly known for engineering works in Brazil; Herr Hobrecht, the designer, constructor and chief engineer of the Berlin sewers; and M. Guérard, the engineer of the Port of Marseilles. Thirty plans already in existence were laid before the Commission and all were judged incomplete or inapplicable to Cairo; but three were praised above the others and therefore the Government prize of £300 has been divided among them. One of the successful competitors is Mr. John Price, sanitary engineer to the Government, and he has also been given the grade of Bey. The Commission then elaborated their own scheme, which they calculate should not cost more than £500,000. But as they did not attempt to enter into any details it will require some months' hard work to determine whether this estimate is a correct one. The Commission recommend, as was anticipated, the system *tout à l'égout* and the formation of a large sewage farm in the desert to the north-east of the town. They propose to divide the city into four great zones, through each of which should flow a main sewer to receive by gravitation the sewage of the zone. These four sewers are all to end in one station, about half a mile to the north of Cairo. Hence the sewage should be pumped to a certain height, from which it should be forced as rapidly as possible through a succession of cast-iron pipes till it reaches the desert land to be irrigated. They particularly insist that the flow through these pipes is to go on continuously by day and night, without disinfection or contact with air. They also veto the manufacture of poudrette, into which the cesspool contents are at present converted in a secluded spot in the desert. They rather cleverly propose to utilise the Khalig by building one of the main sewers under its bed. This Khalig is an open drain running through some of the most crowded parts of the city; it is much older than the Mussulman religion and has nothing to do with it, but unfortunately the religious devotees here are of a contrary opinion and resent any attempt to close it. The commissioners finish their report by noticing the faulty position of the intake of the water-supply from the Nile, and by decreeing that houses unfurnished with proper water distribution shall not be permitted to be in connexion with the new sewers. They recommend further that public latrines shall be provided in greater number, that the mosques and native drinking fountains shall be improved, the levelling and metalling of streets in the native quarters and the opening out as far as possible of new streets to act as ventilating shafts for the crowded districts. Mr. Latham's hydraulic scheme was rejected by the Commission on the grounds of its cost (£500,000) and of its requiring complicated machinery at twelve stations in the town itself, where the sewage must be collected and disturbed. Here it may be remarked that Mr. Latham's scheme was to carry away 15,000,000 gallons of sewage per day, while that of the Commission is to remove eight times as much; it must therefore be that the former scheme was

very expensive or that the new one is extraordinarily cheap. The Commission arrive at their high figures by calculating a sewage flow of 0·4 litre per second per hectare, while for rainfall they allow 3·4 litres; that is, their daily allowance is for nearly nine times more rain than sewage, yet they distinctly point out that the annual average rainfall of Cairo during the last ten years is an inch and a quarter. It is suggested that they have proposed to design their sewers in consequence of one tropical shower of rain, with hail and thunder, which fell during seventy minutes last December. This is as bad as one of the competitors for the Government drainage prize, who assumed that we had a tropical rainfall to provide for. Then, again, the Commission find that Cairo consists at present of an area of 1630 hectares, and they elect to calculate that there are 400 people to each hectare. This gives us a density of population 63 per cent. over and above the 374,000 we now have. There are some arithmetical errors in the report which may have been caused by linguistic difficulties. But we must be grateful to the Commission, for without them Cairo would still have to wait for its preliminary plans, for which the Public Works Department has now been granted a credit of £2000. Deducting the cubic cesspool contents which are removed from the better houses in Cairo, there still remain some 100,000 cubic metres of sewage every year which soak away into the subsoil water. On the other hand, out of some 56,000 houses in Cairo there are only 4300 which receive good water from the water company; the remainder are dependent on wells and on water-carriers, who bring the water from wherever they think fit. There are thus some thousands of native houses in Cairo which either have no water at all or are dependent entirely on wells dangerously contaminated by sewage. It is to be hoped that Fiend Cholera is not aware of these facts. The natives seem to enjoy an extraordinary immunity from enteric fever, but their great mortality is largely dependent upon other filth-producing diseases, such as diarrhœa, dysentery, diphtheria, bilharzia and lung diseases. The English inhabitants of Cairo, who take a little trouble about their drinking-water and sewage removal, live as healthily as in London.

Cairo, June 21st, 1892.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE ELECTION TO THE COUNCIL.

THE fourth election of Fellows to fill vacancies on the Council of the College, under the new regulations, voting by means of proxy papers being now permitted, was held in the Library of the College on the afternoon of Thursday, the 7th inst., from two to four o'clock and resulted as follows:—

THOMAS SMITH	285	(including	2	plumpers).
JOHN TWEEDY	237	,,	21	,,
ARTHUR EDWARD DURHAM	203	,,	8	,,
F. HOWARD MARSH	200	,,	0	,,
Henry Morris	188	,,	8	,,
Jeremiah Macarthy	106	,,	9	,,
William Anderson	90	,,	1	,,
Alexander Oberlin MacKellar ...	86	,,	3	,,
J. Warrington Haward	77	,,	18	,,
George Cowell	75	,,	4	,,

Mr. Thomas Smith and Mr. Durham were therefore declared to be duly re-elected, and Mr. Tweedy and Mr. Howard Marsh to be elected, members of the Council. More interest was taken in the election than was the case last year, for 149 Fellows attended and voted in person; more were also present at the announcement by the President of the result of the poll. With regard to the use of proxy papers, it appears that 437 were applied for, but only 367 were returned; last year 322 valid proxy papers were sent in and 119 personal votes were recorded.

Mr. H. B. Robinson and Mr. E C. Stabb acted as scrutineers of the ballot.

IMPROVEMENTS AT THE COLLEGE.

Those of our readers who visited the College on Thursday and went into the museum must have been much impressed with the important improvements effected by the addition of the new rooms. Proceeding through the doorway on the right after entering the College, the visitor sees the entrance of the new large museum across the old hall, now much enlarged by the removal of the room formerly used by the conservator of the museum. This new large museum is a very spacious room, lighted from above and at the north end, and well designed for the exhibition of specimens. The ground floor is chiefly devoted to the use of those wishing to study human anatomy, and arranged on tables of special design are the numerous preparations so well known for their excellence (the work of Mr. Pearson), which formerly occupied the ground floor of the western museum. The tables are so arranged that shelves can be drawn out on which the student may place his book so as to be opposite the specimen which he wishes to "read up" and seats are provided. Around the room in glass cases are arranged osteological preparations and part of the large collection of crania in the possession of the College. There are two galleries in this museum, both of which are to be occupied by pathological specimens as they are added. At present there are many important preparations—the overflow of the older rooms. The arrangement when fully carried out will be very satisfactory, for, after entering the first gallery in the old western museum, the preparations can be most usefully studied in a definite order from the left, the series being so arranged that the student passes from group to group in their order and, returning into the old museum, ends the tour of the galleries on this floor at the old entrance. He can then ascend and follow a series in continuation of the other, arranged in a similar manner in the two galleries above. The anthropological series on the ground floor of the larger of the new museums is continued in the glass cases on the ground floor of the smaller and in the wall cases on one side of the western museum. The middle gallery of the small museum is occupied by teratological preparations and the top gallery by the illustrations, by means of photographs and water-colours, of various diseases. The series of invertebrata have been placed in six table cases in the western museum, the four following table cases next in order being used for the specimens illustrating the development of the human skeleton. The cases in which the series of invertebrata have been placed have been relieved and painted in chocolate—a matter which is worthy of mention, as this colour makes the preparations show much more clearly and is less trying to the eyes, and indicates what is evident throughout, that the furnishing of the museums and arrangement of specimens have been carried out under skilled and practical supervision.

Medical News.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS IN IRELAND: CONJOINT SCHEME.—The following candidates have passed the First Professional Examination:—

J. C. Baskin, J. W. Benson, W. J. Beveridge, G. R. Caithness, D. F. Clarke, H. F. Conyngham, G. Corcoran, W. M. Cummins, G. G. Delap, J. C. Edge, E. A. Fenton, T. Fitzgerald, R. Glynn, R. M. Hamilton, P. P. Harold-Barry, W. J. Healey, C. E. Hodgson, C. R. Horrell, W. E. Jolliffe, W. M. Jones, C. A. Kenny, C. D. Martin, H. B. S. Montgomery, J. Morrissey, J. A. McMunn, M. O'Brien, W. H. Odlum, J. J. O'Reilly, T. J. Perkins, T. J. Potter, F. J. Purcell, A. S. Sampey, R. W. Scully, J. N. Shee, E. W. Silberry, Miss L. F. Strangman, Miss M. S. Strangman, R. H. Walpole, F. C. Wright, and A. H. O. Young.

THE COATBRIDGE MEDICAL FEES CASE.—On the 1st inst. Sheriff Berry issued an interlocutor reversing the decision of Sheriff-Substitute Mair in the case of Dr. Macphail *v.* the Coatbridge Town Council. The local Police Act constituting Coatbridge into a burgh contains a clause compelling doctors to report all contagious diseases and providing for their being paid 2*s.* 6*d.* for each report. A dispute arose between the medical man and the Council as to whether measles and whooping-cough were included; and the Council eventually adopted the Infectious Diseases Notification Act. The medical men maintain, however, that under the local Act they were bound to report and the Council to pay for the reports of these two diseases. Sheriff Mair gave effect to this contention and the Council appealed to Sheriff Berry, who finds that the defenders, the Local Authority of Coatbridge, having adopted the Infectious Diseases (Notification) Act, 1889, and not having taken steps to apply the Act to measles and whooping-cough, are not now liable to pay to the pursuer fees for cases of these diseases reported by him

NEW INFIRMARY, LEWISHAM.—The Bishop of Lichfield performed the ceremony on Saturday of laying the foundation stone of a new infirmary, to be erected by the Lewisham guardians, at an estimated outlay of £60,000.

SUPERANNUATION ALLOWANCE. — Mr. George Cheesman, L.R.C.P. Edin., M.R.C.S., lately district medical officer of the Southampton Incorporation, has been granted a superannuation allowance of £132 19*s.* 8*d.* per annum.

GUY'S HOSPITAL MEDICAL SCHOOL.—The Right Rev. Randall T. Davidson, D.D., Lord Bishop of Rochester, distributed the medals and prizes at Guy's Hospital Medical School on Wednesday last, July 6th. The dean of the school read the report for the past year and a vote of thanks to the Lord Bishop was moved by the treasurer and supported by the senior physician and senior surgeon.

MEDICAL MAGISTRATES.—The names of the following gentlemen have been placed on the Commission of the Peace—namely, John Parsons, L.R.C.P., F.R.C.S. Edin., L.F.P.S. Glasg., and George Stringer Pullon, M.D., C.M. Edin., for the Borough of Barnsley, James Thomson William Baird, M.B., C.M. Edin., and Hugh Moss, M.D. St. And., M.R.C.S., for the Borough of Congleton, and James Aitken Myrtle, M.D., C.M. Edin., for the Borough of Harrogate.—John E. Jones, M.D. St. Andrews, M.R.C.S. &c., of Brynyffynon, Dolgelly, having, on the recommendation of W. R. M. Wynne, Esq., the Lord-Lieutenant, been placed on the Commission of the Peace for the county of Merioneth, made the usual declaration and subscribed the necessary oaths and qualified as a magistrate for the county at the Trinity quarter sessions held at Dolgelly on June 28th.

THE SANITARY INSTITUTE.—The forthcoming annual congress of this institute will be held at Portsmouth, commencing on Monday, Sept. 12th, and continuing throughout the week. The inaugural address of the president and the sectional and general meetings will be held at the Town Hall, but the Health Exhibition will take place in the new drill hall and include sanitary apparatus and appliances in connexion with the congress. The Duke of Connaught and Strathearn has consented to become the patron.

PRESENTATIONS.—Dr. Grant of Ellon has been presented by the St. Andrew's Ambulance Classes, Ellon, with a handsome microscope and case.—Mr. Charles Smith, M.R.C.S., of Kinnairdy, Marnoch, has been presented by his friends, on the occasion of his professional jubilee, with an illuminated address and a purse of 292 sovereigns.—Mr. Richard T. Williams, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glas., who for several years past was assistant to Mr. J. R. James of Cwm Avon, having left that town, has been presented by his friends and well-wishers at Cwm Avon with a well-executed illuminated address and a costly box of surgical instruments.

SCHOOLS OF SURGERY: ROYAL COLLEGE OF SURGEONS, IRELAND.—The following prizes have been awarded for the summer session:—Operative Surgery: G. Hamilton, gold medal; O. W. Elsner and T. C. Perry, equal, silver medals. Practical Chemistry: H. E. Eardley, £3 and medal; H. F. Conyngham, £1. Practical Histology: E. A. Meeke, £3 and medal; E. C. Hodgson, £1 and certificate. Materia Medica: E. T. Moore, £3 and medal; E. A. Meeke, £1 and certificate. Pharmacy: R. M. Hamilton, £3 and medal; H. B. Montgomery, £1 and certificate. Medical Jurisprudence: T. T. O'Donnell, £3 and medal; L. F. Corbet, £1 and certificate.

INTERNATIONAL CONGRESS OF PHYSIOLOGISTS.—The second International Congress of Physiologists will be held at Liège (Belgium) from the 29th to the 31st of August. An exhibition of physiological apparatus will be arranged Those taking part in the Congress, the directors of physiological laboratories and makers of instruments, recommended by members of the Congress, will be at liberty to exhibit. The exhibition will be opened two days before the Commencement of the Congress and be closed two days after its conclusion. Professor Fredericq, director of the Physiological Institute of the University of Liège, has kindly offered to place his institute at the service of members desiring to give demonstrations, or to show scientific apparatus. Those intending to be present at the second congress should communicate with Professor Léon Fredericq, Liège or to Mr. C. S. Sherrington, St. Thomas's Hospital, London, before the 1st of August.

THE DENTAL HOSPITAL OF LONDON.—The medical staff and Lecturers of this institution have issued cards of invitation to a conversazione, which is to take place on Wednesday, July 13th, at 8 P.M., at the Royal Institute Galleries, Princes Hall, Piccadilly. At 8.30 P.M. there will be a prize distribution by Professor St. George Mivart, F.R.S.

THE METROPOLITAN HOSPITAL.—Lord Sandhurst presided at the recent annual dinner in aid of the funds of the above hospital. He defended the conjunction of a provident dispensary and a general hospital, and assured the public that unless they subscribed more liberally to hospitals they would need to apply to the State or to local funds for support.

NEW COTTAGE HOSPITAL, HORSHAM. — On Saturday the deeds of this hospital were delivered to the trustees and the building declared opened. It is well situated in the Hurst-road, provides eight beds in three wards, besides three each in the special male and female wards, and has been erected at an outlay of upwards of £1700, the whole of which is covered by subscriptions received and about £200 a annual subscriptions are promised towards its maintenance.

THE LORD MAYOR AND THE WELSH EISTEDDFOD. The Lord Mayor of London visited Bridgend on Monday to open the annual Eisteddfod in aid of the Local Cottage Hospital. His Lordship was received by the Eisteddfod Committee and the members of the Local Board at the railway station and presented with an address of welcome; he was afterwards escorted to the Eisteddfod Pavilion by an imposing procession, where he declared the Eisteddfod opened.

METROPOLITAN ASYLUMS BOARD.

Return of Patients remaining in the several Fever Hospitals of the Board at Midnight on July 5th, 1892.

Hospital.	Beds occupied.						Total accommodation.
	Scarlet fever.	Diphtheria.	Typhus fever	Enteric fever	Other diseases	Total	
Eastern Hospital	360	78	2	26	—	466	482
North-Western Hospital	317	73	..	5	..	395	411
Western ,,	174	22	..	10	4	210	224
South-Western ,,	229	45	..	4	..	278	348
South-Eastern ,,	345	14	1	11	..	371	424
Northern ,,	704	20	..	..	..	724	732
Gore Farm ,,	79	..	..	..	..	79	149
Totals	2208	252	3	56	4	2523	2770

SMALL-POX.—*Atlas* hospital ship, 40.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ALLDEN, J. H., M.R.C.S., has been reappointed Medical Officer of Health for Shirley.

BOLUS, H. R., M.B., B.C. Cantab., has been appointed Resident Obstetrician to Guy's Hospital.

COLLINS, RICHARD HAWTREY, M.R.C.S., L.R.C.P. Lond., has been appointed Senior House Surgeon to the Poplar Hospital for Accidents, vice Williams, resigned.

COUNSELLOR, CHARLES EYRE, M.D., L.S.A. Lond., has been appointed Physician to the Esmeralda County Hospital, State of Nevada, U.S.A.

DOIDGE, M. J., B.A. Cantab., M.R.C.S., has been appointed Medical Officer for the Fourth District of the Bisbridge Union, vice B. L. Tandy, resigned.

DONALD, H. C., M.B., C.M. Glasg., has been appointed Parochial Medical Officer, Paisley Burgh.

EVERS, C. J., M.B. Durh., M.R.C.S., has been appointed Medical Officer of Health to the Port and Borough of Faversham.

FLOWER, F. J., M.R.C.S., has been reappointed Medical Officer of Health for Warminster.

GAYLOR, E., L.R.C.P. Edin., L.F.P.S. Glasg., has been reappointed Medical Officer of Health to the Ripley Local Board.

GRANT, F., L.R.C.P. Edin., M.R.C.S., has been reappointed Medical Officer of Health to the Market Harborough Local Board.

HARWOOD, C., M.D. Edin., L.R.C.S. Edin., has been reappointed Medical Officer of Health for the Shardlow Rural Sanitary District.

HAYES, H. W. McC., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Third Sanitary District of the Highworth and Swindon Union.

HEMMING, C. P., M.R.C.S., has been appointed Medical Officer for the Bishop's Waltham Sanitary District of the Droxford Union.

JACKSON, M., M.D. Irel., M.R.C.S., has been reappointed Medical Officer of Health for the Barnstaple Rural Sanitary District.

JAMES, W. E., L.R.C.P. Lond., M.R.C.S., has been appointed, *pro tem.*, Medical Officer of Health for the Abercarn Local Board.

JONES, G. M., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District of the Alton Union.

LANDON, E. E. B., M.R.C.S., L.R.C.P., has been appointed Resident Obstetrician to Guy's Hospital.

LOCKWOOD, C. B., F.R.C.S., has been appointed Assistant Surgeon to St. Bartholomew's Hospital.

LOWNDS, H. A., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer to the Doncaster Board of Guardians, vice Fairbank.

MACKINTOSH, D. J., M.B., C.M. Glasg., has been appointed Superintendent of the Western Infirmary, Glasgow, vice Russell, resigned.

MCCULLOCH, A., M.B., C.M. Glasg., has been appointed Medical Officer for the Tarporley Sanitary District of the Tarvin Union.

PALMER, H. L., M.R.C.S., has been appointed Medical Officer of Health for the Kerry Sanitary District of the Newtown Rural Sanitary Authority.

PASSMORE, W. E., L.S.A., has been appointed Assistant Medical Officer of the Infirmary, Wandsworth and Clapham Union.

RADFORD, WILLIAM J., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant House Surgeon to the Poplar Hospital for Accidents.

ROBERTS, ERNEST T., M.D., C.M. Edin., has been appointed Certifying Factory Surgeon for the Keighley District, and Medical Officer to the Keighley Post-office, vice Arthur Roberts, M.D., D.P.H., resigned.

SICHEL, G., M.R.C.S., L.R.C.P., has been appointed Resident Obstetrician to Guy's Hospital.

SPRENT, W. S., L.K.Q.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Hovingham Sanitary District of the Malton Union, vice Watt.

STONHAM, H. A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Stepney Union.

TAYLOR, HERBERT EDWARD, B.A., M.D., B.Ch., B.A.O. Univ. Dub., has been appointed Medical Officer and Public Vaccinator for the Second District of the Mailing Union, vice Dr. Muirhead.

TAYLOR, S. T., M.B. Lond., L.R.C.P., M.R.C.S., has been reappointed Medical Officer of Health to the Cromer Local Board.

WAIT, J. ALFRED, B.A., M.B., B.C. Camb., has been appointed Junior House Surgeon to the Clayton Hospital, Wakefield.

WARD, GEO. S., L.R.C.P., L.R.C.S. Edin., has been reappointed Medical Officer for the Fifth Sanitary District of the Hertford Union.

WILDING, W. F. W., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health to the Hindley Urban Sanitary District.

WILLIAMS, ERNEST G. H., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer at Jamaica (Colonial Service).

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement.

BOROUGH HOSPITAL, Birkenhead.—Junior House Surgeon. Salary £60 per annum, with board and lodging, but no wine, spirits, or beer. A further sum of from £20 to £25 per annum is usually obtained in fees.

CHURCH OF SCOTLAND (JEWISH MISSION).—Medical Missionary, for the Mission and Hospital at Smyrna. Salary £300, or £250 with dwelling-house. (Apply to J. A. Frail, Esq., W.S., 17, Duke-street, Edinburgh.)

EAST LONDON HOSPITAL FOR CHILDREN, Glamis-road, Shadwell, E.—House Physician. Board and lodging provided.

EAST LONDON HOSPITAL FOR CHILDREN, Glamis-road, Shadwell, E.—House Surgeon. Board and lodging provided.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Junior Resident Medical Officer. Salary £50.

FULHAM UNION.—Assistant Medical Superintendent of the Infirmary. Salary £100 per annum, increasing £10 yearly to a maximum of £130, with board, furnished apartments, attendance and washing.

JOINT COUNTIES ASYLUM, Abergavenny.—Junior Assistant Medical Officer. Salary (a progressive one) commences at £100 a year, with apartments, board and attendance.

LIVERPOOL NORTHERN HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance in the house.

LONDON COUNTY ASYLUM, Hanwell, W.—A Fifth Assistant Medical Officer. Salary £120 per annum, rising £5 a year to £150, with board, furnished apartments and washing.

LUTON FRIENDLY SOCIETIES' MEDICAL INSTITUTE.—Assistant Medical Officer. Salary £150 per annum, out-doors. (Apply to Mr. T. Keens, 12, Grove-road, Luton, Beds.)

MCGILL UNIVERSITY, Montreal, Canada.—Professorship of Pathology for the Faculties of Medicine and Comparative Medicine for one year. Salary for provisional appointment for one year £400 sterling. (Apply to the Dean, Montreal, Canada.)

PARISHES OF WESTRAY AND PAPA WESTRAY, Orkney.—Medical Officer and Public Vaccinator. Salary as Medical Officer £70 sterling per annum.

PAROCHIAL BOARD OF PENNYGOWN AND TOROSAY, N.B.—Medical Officer. Salary from Board £100, cost of paupers' medicines included. (Apply to the Inspector of Poor of Torosay, Auchnacraig, by Oban.)

PONTYBERAN AND PENTREMAWR WORKMEN AND THE NEIGHBOURHOOD. Qualified Medical Man. (Apply to Mr. Jones, Cook's Bridge, Pontyberan, near Llanelly, South Wales.)

QUEEN'S HOSPITAL, Birmingham.—Physician for Out-patients and Pathologist to the Institution for three years. Annual honorarium £75.

READING AMALGAMATED FRIENDLY SOCIETIES' MEDICAL ASSOCIATION. Senior Medical Officer. Salary £200 per annum and all Midwifery and Vaccination fees, with a good house and garden free and a conveyance supplied. (Apply to Mr. Griffin, 82, Southampton-street.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Two Examiners.

ROYAL UNITED HOSPITAL, Bath.—House Surgeon. Salary £60 per annum, with board, lodging, and washing.

SHEFFIELD GENERAL INFIRMARY.—Assistant House Surgeon for three years. Salary £80 per annum, with board, lodging, and washing.

STAINES UNION RURAL SANITARY AUTHORITY.—Medical Officer of Health. Salary £75 per annum.

ST. LUKE'S HOSPITAL.—Resident Clinical Assistant for six months, with board and residence.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, W.—Resident Medical Officer. Salary £105 per annum, with furnished apartments, attendance, coal and gas.

UNIVERSITY COLLEGE, London.—Assistant Ophthalmic Surgeon.

WESTERN DISTRICT OF THE COUNTY OF LONDON.—Coroner. Salary for the ensuing five years £780 a year. (Apply to the Clerk of the Council, Spring-gardens, S.W.)

WIRRAL CHILDREN'S HOSPITAL, Wood-church-road, Birkenhead.—Resident House Surgeon. Salary £50 per annum, with board, lodging on the premises, and washing.

WOLVERHAMPTON EYE INFIRMARY.—House Surgeon. Salary £60 per annum, with rooms, board, and washing.

WONFORD HOUSE HOSPITAL FOR THE INSANE, near Exeter.—Assistant Medical Officer. Salary £150 per annum, with board, furnished apartments, and washing.

WORCESTER AMALGAMATED FRIENDLY SOCIETIES' MEDICAL ASSOCIATION, Worcester.—Assistant Medical Officer. Salary (without residence) £140 per annum, with part of Midwifery fees; also £20 per year for cab hire.

Births, Marriages, and Deaths.

BIRTHS.

ADAMS.—On June 29th, at Aldersgate-street, E.C., the wife of John Adams, F.R.C.S., of a daughter.

BINNIE.—On June 30th, at Meadowfield House, Brandon, Co. Durham, the wife of R. M. G. Binnie, M.D., C.M., of a daughter.

CLARKE.—On July 4th, at Blackheath, the wife of Ernest Clarke, M.D., of a daughter.

DODS.—On July 4th, at High-street, Fenny Stratford, the wife of Louis F. Dods, Surgeon, of a daughter.

FERRIS.—On July 1st, at Hurstlea, Uxbridge, the wife of John Spencer Ferris, M.B. Lond., of a son.

MARRIAGES.

ADAMS—MIDDLEMASS.—On June 29th, at St. Augustine's, Queen's-gate, William Coode Adams, M.B., eldest son of the late Dr. Adams, of North London, to Blanche, second daughter of the late William Middlemass, J.P., of March Mount, Cheltenham.

LUND—BALLANTINE.—On June 30th, at St. Andrew's Presbyterian Church, Bournemouth, Herbert Lund, F.R.C.S., of St. John-street, Manchester, to Mary Crockatt, eldest daughter of the late Thomas Ballantine, Esq., of Greenock.

MORISON—MUSHET.—On June 29th, at Dalkeith, by the Rev. Neil M'Lachlan, M.A., James Rutherford Morison, F.R.C.S. Eng. & Ed., of 14, Saville-row, Newcastle-on-Tyne, to Louie, youngest daughter of the late W. Mushet, of Fairfield House, Dalkeith, N.B. No cards.

PARKER—LÜLING.—On June 30th, at St. Mary Abbott's, Robt. William Parker, M.R.C.S., of Welbeck-street, Cavendish-square, W., to Marie, second daughter of the late Charles Lüling, of New York.

SALZMANN—THORNTON.—On July 5th, at St. Mary Abbot, Kensington, Frederick William Salzmann, M.R.C.S., of Brighton, to Grace Harriet, youngest daughter of the late John Thornton, Esq., Bengal Civil Service.

THOMAS—JENKINS.—On June 30th, at St. John's Church, Cardiff, by the Rev. David Davies, M.A., Vicar of Newcastle, Bridgend, John Lynn Thomas, late House Surgeon at the Cardiff Infirmary, to Rosina Mary, only daughter of the late Edward Jenkins, Esq., of Penylan, Cardiff.

VOLATTI—MUSGRAVE.—On June 22nd, at Holy Trinity Church, Whitehaven, by the Rev. James Anderson, Dr. W. J. Volatti, late Royal Navy, to Mary A. F. Mrs. Musgrave, of Whitehaven, Cumberland.

DEATHS.

BURCHELL.—On July 5th, at Delamers, Bradwell-on-Sea, Essex, Peter Lodwick Burchell, M.B. Lond., F.R.C.S. Eng., aged 74.

SWINDELL.—On July 3rd, at Whetstone, N., Joseph John Swindell, Surgeon, in his 75th year.

TRIMNELL.—On July 2nd, at Southsea, Deputy Surgeon-General D. W. Trimnell, Madras Army, son of the late Rev. G. C. Trimnell, aged 58.

WILLINGTON.—On July 3rd, at The Cottage, Cortayne-road, Fulham, Henry Willington, M.D., late of South Kensington, in his 80th year.

WRIXON.—On June 30th, at Rose Lea, Castlebar-road, Ealing, J. Wrixon, Esq., M.R.C.S., late of Watford, Herts, and eldest son of the late Captain Wrixon, 16th Lancers.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 7th, 1892.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry bulb	Wet Bulb.	Solar Radiation in Vacuo	Maximum Temp. in Shade.	Min. Temp.	Rainfall.	Remarks at 8.30 A.M.
July	1	30·26	W.	60	55	122	74	52	..	Hazy
,,	2	30·17	W.	66	58	124	78	58	..	Bright
,,	3	29·79	S.W.	69	61	127	83	61	..	Hazy
,,	4	29·90	S.W.	67	61	125	80	61	..	Cloudy
,,	5	30·00	W.	62	57	117	70	55	..	Cloudy
,,	6	29·93	W.	61	56	123	69	55	·45	Cloudy
,,	7	29·67	S.W.	63	59	105	67	60	·13	Raining

Notes, Short Comments & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

CARPENTER AND DUKES DEFENCE FUND.

We are informed that the appeal made in connexion with this fund has not been responded to in so free a manner as could be wished, considering the principle involved. Dr. Carpenter's family have generously declined to take any part of the subscriptions till Dr. Dukes is fully released from his share of the debt. The following additional subscriptions have been received:—

The Croydon Medical Reading Society ..	£10	0	0	Dr. Beard	£1	1	0
The Editors of THE LANCET	3	3	0	Dr. Mickle	1	1	0
				Mr. C. G. Woodd	1	1	0

A CORRESPONDENT cautions practitioners in engaging gentlemen to fill the post of locum tenens to first consult the Medical Register or to obtain some proof of their being registered.

Mr. C. P. Beadles.—The paper will appear in an early number.

ROMANCE IN THE PROFESSION.

To the Editors of THE LANCET.

SIRS,—I have chosen the above title for this communication as it certainly is the most romantic event that has occurred in my practice, now extending over thirty years. I must premise by stating that the patient alluded to had, through no fault of his own, failed in business and was utterly unable to cancel his indebtedness to me of a sum amounting to nearly £50.

Last Wednesday evening a lady and gentleman called to see me and on entering my consulting-room I found they were complete strangers. The first sentence of the latter revealed his nationality and it was evident he hailed from America. As near as I can remember the following conversation ensued. "I think, sir," said he, "you attended Mr. —— and his family." "That is so," replied I. "Well, sir, I am under considerable obligation to them, as when my wife here, who is a connexion of theirs, was a little girl and left an orphan they were very kind to her for years and I have never forgotten it. Now, the other night, sir, I went there to supper and as I had been out all day I was considerably tired out and in the evening I was resting on the sofa and I have no doubt they thought I was asleep. Well, sir, I heard all their conversation and Miss —— was telling my wife of all your attention and kindness to them—how you under Providence had saved her life and what sorrow they felt at not having been able to recompense you. Well, sir, they talked so much about it that before I got off that sofa I said to myself, 'That doctor shall be paid.' Now, sir, would you kindly look at this?" Here my visitor held out a malacca cane, the handle of which was carefully enclosed in a morocco case. On opening it I found the cane had a beautifully carved ivory handle, which was studded with jewels, consisting of small rose diamonds, eighty or ninety in number, worked into fanciful shapes representing small birds, fish, &c., and here and there a ruby, emerald and amethyst. It was a beautiful piece of art-work and I quite believe it cost, as he said, £50. He told me he had taken it for a debt in the East fifteen years ago. He then went on to say that if I admired it he hoped I would accept it as a recompense for my attendance upon Mr. —— and his family. I, of course, expressed my admiration at the good feeling and sympathy called forth by his proposal and was leaving the room to show the cane to my wife when he stopped me, saying, "Doctor, I have another proposition to make to you. I own a number of plots of building land in the most rising city of ——, in South America, where I reside, and if you would prefer it I will give you a plot worth £100 now (and if you stick to it it will soon be worth double). You shall have the deeds sent to you and have it properly transferred on my return from my holiday here, and whichever you like to choose, the stick or the land, I shall be pleased to leave to you entirely." My friend kindly left the jewelled cane in my possession until the morning; but considering the number of burglaries going on in the suburban districts I decided on becoming a landed proprietor in the United States.

I am, Sirs, yours faithfully,

London, July 4th, 1892. LONDONIENSIS.

P.S.—A kind but possibly envious friend has just informed me that an Englishman cannot hold land in America without residing there for three months. If this is so, I shall be pleased to show you the stick some day.

MEDICAL AID ASSOCIATIONS AND FRIENDLY SOCIETIES.

To the Editors of THE LANCET.

SIRS,—Your lay contemporaries, several of them—most notably *The Times*, *City Press*, *Rock*, &c.—have in a very outspoken manner referred to the great injustice done to the profession by hospitals and dispensaries which admit patients to their benefits without any inquiry at all as to the applicant's ability to pay the modest fee which an ordinary general practitioner asks nowadays. If free medical treatment or treatment for 1d. per week is permissible, even though recipients can afford to pay a proper fee, the *City Press* asks why legal advice should not be afforded on the same terms? I have two newspapers—viz., the *Kidderminster Shuttle*, with an account of the "Proceedings of Council *versus* Medical Aid Officer," and in the conclusion of the report it is mentioned that several of the members of the General Medical Council stated openly that they held "strong private opinion" on these "medical aids." The President asked the counsel who defended Dr. Martin, "How would the members of your [the legal] profession like associations formed for the purpose of obtaining legal advice and assistance on similar terms?" Mr. Corbett (in the absence of Mr. Lawrence) replied: "I am certain of this, sir, that if such an association were formed we [i.e., the Incorporated Law Society] should endeavour to deal with it promptly." This expression of opinion was met with the ejaculation, "Hear, hear!" from the members of the Council. These associations have no wage limit; they admit anyone, they rob the outside medical men, they build premises and they save money at the expense of the slavish toil of their medical officers. In small towns they do infinitely more harm to the general practitioner than any of the hospitals or provident dispensaries. The General Medical Council is the only body to satisfactorily deal with this question.

I am, Sirs, yours faithfully,

July, 1892. A. T. H. D.

To the Editors of THE LANCET.

SIRS,—So much has lately been said in disparagement of Medical Aid Associations that I should feel obliged by your allowing me, as medical officer to one of these associations, to place before your readers the other side of the question.

I fail to see the difference between the working of these associations and that of the club practices of medical men throughout the kingdom. It can only be a question of larger number, the fees paid by members being in both cases identical; and I think I may safely say that, as medical officers to associations, in the majority of cases, do not entertain private practice, they devote more time to their club patients than private practitioners are able to do. And this was a powerful incentive to the starting of Medical Aid Associations; and as to medical men holding these appointments, to my mind it is far better than accepting an assistancy at an absurdly low salary, or opening a dispensary in the slums and giving advice and medicine for sixpence and sometimes less. Unfortunately, in our profession the supply is greater than the demand, and we cannot therefore choose for ourselves, especially when one is without sufficient capital to embark in private practice in a good way. In your issue of June 18th a question was asked by "A Hospital Surgeon" relative to Medical Aid Associations appointing unqualified assistants. Very few associations provide unqualified men, and the tendency now is to substitute qualified assistants for them; but how do we differ in this respect from private practitioners? Apologising for the length of this letter,

I am, Sirs, yours faithfully,

June 21st, 1892. "AUDI ALTERAM PARTEM."

To the Editors of THE LANCET.

SIRS,—I hear of a patient lying ill not far from me who is attended by a club doctor, but waited upon by a trained hospital nurse. We move so quickly nowadays that I daresay in a year or two this will be the usual state of things, now that bishops and ex-ministers are so eager to join the nearest friendly society.—I am, Sirs, yours truly,

July 4th, 1892. M.B.

THE LEEDS INFIRMARY.

A CORRESPONDENT signing himself "Chapeltown" complains of the wrong uses the infirmary is put to. A new wing has been openedand, as the writer says, "the hat is being sent round" for £5000 a year additional to maintain its efficiency. He objects to the abuse of the out-patient department—to boards of guardians compounding with the infirmary for the treatment of fractures, dislocations, &c., for payment of which the law has already provided as "extras" to the medical officers; to the infirmary continuing the after-treatment of cases taken there in the first instance as emergencies; to employers of labour sending their workmen there for small injuries &c. We are too familiar with such complaints, which are reasonable, and which tend very much to damp true charity for fitting cases.

Kappa.—We recommend our correspondent to purchase either Fry's or Lowe's "London Charities," which will give him all the information he requires.

Justitia.—Such a certificate should have been submitted to the coroner.

Medicus is thanked for his communication.

FIFTY-THREE MARBLES SWALLOWED AND EVACUATED WITHOUT INCONVENIENCE.

To the Editors of THE LANCET.

SIRS,—J. K. M——, a boy of sixteen, was admitted on Nov. 10th, 1891, into the Cardiff Infirmary, under Dr. Wallace, on account of, as he stated, having swallowed fifty-three marbles, which he could not get rid of. My thanks are due to Dr. Wallace for his kindness in allowing me to publish this, I believe, unique case. The boy informed me that he had with former experiments on himself swallowed as many as twenty-three marbles and brought them up again without missing one of them. The reason why he took this extraordinary number was that he had suffered on the date of admission heavy losses at a very exciting game of marbles with a friend and with a view to recover his lost property he bet his more skilled (in marble playing) adversary that he would swallow fifty "alleys." The patient won his bet, but was unable to resume the play on account of his inability to reproduce his "commoneys" and "taws." On admission there was a distinct fulness in the epigastrium, which felt, as Mr. Morland, the present house surgeon, remarked, like a thick bag full of small cobble. On inverting and shaking the boy the rattling as of a receding wave on a pebbly beach could be heard for yards around. The only allusion to a similar phenomenon that I know of is in the celebrated case related to Mr. Pickwick by Mr. Hopkins of St. Bartholomew's Hospital, where twenty-five beads in a child's stomach made "a devil of a noise, like a small hailstorm." On Nov. 11th the patient passed seventeen marbles per anum at 8.30 A.M., and at 7 P.M. on the same day he passed twenty-nine. The remaining marbles were passed next day and the patient was discharged. The marbles weighed ten ounces, and consisted mostly of "commoneys" and a few "top" or "bottle alleys" and two "bloods." A small boy in one of the narrow streets near Drury-lane Theatre informed me that one of the "alleys" was what was called a "buck"—a species of great value on account of being very hard and rebounding well. It is interesting to note that the first batch of seventeen was passed with hardly any feces within twenty hours of being swallowed and they must have passed through the ileo-cæcal valve in single file; for several of the marbles were three-quarters of an inch in diameter, the whole number forming a single column thirty-five inches long. In the museum of the Royal College of Surgeons there are many articles reminding one of an ironmonger's shop, but which were got from the bodies of either insane or hysterical individuals and the motive in all these cases was very different from that which prompted the subject of this case to swallow his marbles. I am, Sirs, yours faithfully,

J. THOMAS,
July, 1892. Late House-Surgeon to the Cardiff Infirmary.

HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

Erratum.—On page 47 of our last issue, owing to an obvious error in the transcription of the notes of our report, Sir James Paget was made to say: "It would be a great happiness to him if he could help the progress of the Hospital by speaking of the great good which *he* had accomplished." The passage should of course have read, "the great good which it [i.e., the hospital] had accomplished."

A.—We cannot defend C.'s conduct supposing it to be as represented. Consultants should set an example of professional propriety.

Verax does not give any address.

THE M.D. WASHINGTON.

To the Editors of THE LANCET.

SIRS,—A young medical friend has asked me to make inquiries regarding the Washington M.D.—how it is obtained, if a previous university training is required, an examination held, and what are the fees. Several practitioners in his neighbourhood have lately called themselves "Doctor" and looking up the Medical Directory he found that this newly acquired distinction was the Washington M.D.

I am, Sirs, you s truly,
July 3rd, 1892. AN ENQUIRER.

ADVERTISING IN VICTORIA, BRITISH COLUMBIA.

THE following is a batch of advertisements from the *Victoria Daily Times*. We trust that public professional opinion will take note of this style by way of caution:—

"Dr. Hugh Watt, M.C.P.S.Ont., and B.C. Late of Cariboo. Office and residence No. 36½, Douglas-street (Dr. Milne's old residence)."

"Dr. G. L. Milne. Office—36, Douglas-street. Telephone at office, No. 16. Telephone at residence, No. 208."

"Dr. Sproule, B.A. Dublin University. Surgeon and Physician. Allopath and Homœopath. Late Surgeon British Royal Mail Steamers. Electricity used when suitable. Rooms 1, 3 and 4, Clarence Hotel, Victoria."

"Dr. Ernest Hall, L.R.C.P. and C.M. Edin. Specialty—Eye, Ear, Nose and Throat: Jewell Block, corner of Yates and Douglas-streets."

"Drs. Hall and Leitch. Offices: Driard Block, 60, Douglas-street. Dr. F. W. Hall, M.D., C.M.; Dr. H. D Leitch, M.D., C.M., M.C.P.S.O., F.T.M.S. Specialty—Diseases of Women and Diseases of Rectum. Lately attending Woman's Hospital and Post-Graduate School and Hospital, New York."

"Homœopathy. Dr. John Hall, 98, Yates-street, over Cochrane and Munn's Drug Store. Chronic and Children's Diseases a specialty. Office hours from 1 to P.M. only, excepting Sunday and holidays."

Surgeon-Major Naismith, M.D., Ayr, is thanked for his communication, but we regret that it is too long and technical for insertion in our pages.

Athenæum should forward an application to the Lord-Lieutenant of the county for the purpose in question.

Mr. C. Elliot.—No.

THE OPIUM HABIT.

To the Editors of THE LANCET.

SIRS,—A medical man takes a practice in a small country village and finds opium taking extensively practised. The drug, both solid and as laudanum, is apparently sold *ad lib.* by the village chemist to anyone who asks for it. Is the medical practitioner justified in doing nothing, notwithstanding that he has several patients suffering from the effects of opium taking, who are anxious to get rid of the habit and probably would do so if the temptation did not lie at their door? And supposing a death certificate to be signed as due to opium eating, would there necessarily be an inquest? I enclose my card.

I am, Sirs, yours faithfully,
July 4th, 1892. OPIUM.

THE VILLAGE NURSE.

To the Editors of THE LANCET.

SIRS,—I should be very glad if any of your readers having experience in such matters would kindly give me hints as to the best method of instituting a "village nurse," one to attend the sick of all classes in a country village; whether it is better to obtain the nurse by advertisement or from a nursing institute. And, also, if there exists any society which assists in providing village nurses.

I am, Sirs, yours faithfully,
July 5th, 1892. RUSTICUS.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Messrs. Allen and Hanburys, London; Dr. Ascham; Messrs. Arnold and Son; Mr. Baines, Birkdale; Mr. Baird, London; Messrs. Burgoyne and Co., London; Mr. F. J. Bennett, London; Messrs. Brown, Gould, and Co., London; Dr. Boyland, Paris; Dr. Blanc, Cannes; Mr. Fletcher Beach, London; Dr. Bateman, London; Mr. Cecil Beadles, Colney Hatch; Dr. Henry J. Buck, Clapton; Mr. Lennox Browne, London; Dr. C. J. Cullingworth, London; Mr. Clinton, London; Dr. Harry Campbell, London; Mr. C. F. Clarke, Oxford; Messrs. Condy and Mitchell, London; Mr. Cameron, Hong-Kong; Messrs. Clay and Sons, London; Dr. Murdoch Cameron, Glasgow; Mr. Henry Cowe, Berwick; Dr. P. R. Dodwell, Brompton; Dr. Dees, Exeter; Mr. Hugh R. Davis, London; Mr. A. Duke, Dublin; Mr. Davis, Detroit, U.S.A.; Capt. A. G. Froud, London; Dr. Fitzpatrick, London; Dr. Theophilus Fisher, London; Mr. Frost, London; Mr. F. R. Firmin, London; Mr. F. W. Gelden, Halifax; Mr. Greenish, London; Messrs. Gudman et Cie., Paris; Mr. Gibson, Worcester; Mr. Glendinning, Abergavenny; Mr. Holm, London; Mr. Hulme, Birmingham; Mr. Haswell, South Shields; Mr. Humphreys, London; Mr. Herbert, Brompton; Mr. Jabez Hogg, London; Mr. R. N. Ingle, Jersey; Mr. L. E. Jones, Wales; Mr. D. Janson, Godalming; Dr. Norman Kerr, London; Messrs. Keith and Co., Edinburgh; Messrs. Krohne and Sesemann, London; Dr. R. Whittington Lowe, London; Surgeon-Lieutenant-Colonel Edward Lawrie; Mr. Muirhead Little; Mr. Hugh Lane, Bath; Messrs. Lloyd and Co., Leicester; Messrs. Leader and Sons, Sheffield; Mr. Victor Maurel; Mr. Mansell Moullin; Mr. F. M. Morgan; Mr. Widenham Maunsell, London; Prof Macnamara, Dublin; Messrs. Macfarlane and Co., London; Mr. J. C. Melliss, London; Mr. Mason, Pateley Bridge; Mr. Moore, Liverpool; Mr. E. Merck; Messrs. McKewer, Son, and Co., Carlisle; Mr. Norris, Birkenhead; Dr. Nichol, Margate; Dr. O'Reilly, Tuam; Count Ostroroc; Sir James Paget; Mr. Van

Praagh; Mr. Potter, Liverpool; Dr. Pendleton, Brighton; Mr. Fred. Page, Newcastle; Messrs. Parke, Davis and Co., London; Dr. Ryan, Colchester; Messrs. Reid and Donald, Perth; Messrs. Rowntree and Co., York; Dr. Sutherland, London; Dr. Scilla, Potenza; Mr. Carl Salman, Basle; Mr. Clement H. Sers, Peckham; Messrs. Smith and Son, Manchester; Dr. T. M. Sunter, Isleworth; Mr. Smith, Westgate-on-Sea; Mr. Saunders, Manchester; Dr. Smith, Lewisham; Mr. W. T. Smith, Brooklyn; Mr. Jno. Thomas, Cardiff; Dr. Dawson Turner, Edinburgh; Mr. Tyack, Matlock; Mr. Unsworth, Liverpool; Mr. Vickers, London; Dr. D. Wallace, Edinburgh; Messrs. Wright and Co., Bristol; Mr. Roger Williams; Mr. Watt, London; Mr. Ernest Powell Watkins, Notts; Marsden; G. S.; Secretary, Royal United Hospital, Bath; G. D.; F. M.; Janus; Secretary, Royal Portsmouth Hospital; Scolopax; Correspondent; Opium; Verax; Allgemeinen Medicin Central-Zeitung, Berlin; Secretary, Hackney; Audi Alteram Partem.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Fiske, Maidstone; Mr. Birchall, Liverpool; Mr. Ross, Spain; Dr. Morison, Hartlepool; Mr. Price-Jones, Kingston-on-Thames; Messrs. Ellgood and Fuller, London; Mr. Tredinnick, Shropshire; Mr. Owen, North Wales; Mr. Ernst, London; Mr. Irving, Burslem; Messrs. Blondeau et Cie., London; Mr. Tyte, Minchinhampton; Dr. Alexander, Honor Oak; Mr. Davies, London; Mr. Thin, Edinburgh; Miss Pudney, Earl's Colne; Mr. Breach, Newbury; Mr. Garman, Kendal; Baroness Von Roemer, Battle; Mr. Norman, Buckfastleigh; Messrs. Porteous and Co., Glasgow; Rev. Mr. Alison, Edinburgh; Brigade-Surgeon Lane Notter, Southampton; Mr. Roberts, Keighley; Messrs. Hooper and Co., London; Mr. Chatterton, St. Albans; Messrs. Evans, Sons and Co., Liverpool; Dr. Robbins, Quebec; Mr. J. Lemon; Dr. Main, East Ilsley; Mr. Savage, Kimberley; Mr. Edmunds, Lambeth; Mr. Hirst, London; Dr. Mason, Pontypool; Dr. Wilson, Pontypool; Mr. Berry, Pendlebury; Mr. Fitzgerald, Queenstown; Mr. Edwards, Boston, Mass.; Mr. Stephen, Preston; Mr. Martin, Bristol; Mr. Mackey, Pontnewydd; Mr. Borchert, Netley; Mr. Clark, Brighton; Mr. Atkinson, Sherborne; Mr. Patterson, Hetton-le-Hole; Messrs. Whitworth and Stuart, Manchester; Mr. Edwards, Bloomsbury; Mr. Ellis, Bishop Auckland; Mr. Rees, Cardiff; Mr. May, Tunstall; Mr. Toy, Chipping Norton; Mr. Dunn, Preston; Mr. Lucas, Cambs.; Mr. Wolcott, New York; Mr. Griffin, Reading; Prof. Osler; Messrs. Burroughs and Co., London; Mr. Layton, Southend-on-Sea; Mr. Griffiths, Milford Haven; Dr. Martin, Blackburn; Mrs. Hill, Newmarket; Mr. Gordon, Witheridge; Mr. Clarke, Blackheath; Mr. Heywood, Manchester; Mr. Thompson, Launceston; Mr. Jones, Aberkenfig; Mr. Clark, Edinburgh; Mr. Fuller, Ramsgate; Mr. Stenhouse, Glasgow; Mr. Roberts, Witheridge; 7, Chambers-street, Edinburgh; 82, Alvey-street, Walworth; G. S., Seething-lane; Gracious, London; S., St. Leonards-on-Sea; J. M. L., London; Permanency, Croydon; Achilles; British Medical Protection Association; Secretary, Manchester Southern Hospital; Zeta, London; W., London; Gerald, Cheshire; Toxicology, London; D., London; Bonaventure, Birmingham; Medicus, Maidstone; J. S., London; J. P., Kilburn; Cosmo, London; Accoucheur, London; Medicus, London; Rev., Peckham; D., Leeds; Traveller, London; M.B., London; T. M., London; Beta, London; R. H. J., Manchester; H. M., London; M.R.C.S., London; Viti; Permanency, London; Clavicle, London; A. B. C., London; J. S. S.; Medicus, Poplar; Tabes; A. B. C., London; Medicus, Tipton; L. M. N.

NEWSPAPERS.—*Cape Times, Belfast News Letter, Newcastle Chronicle, East Anglian Daily Times, Hobart Mercury, Sheffield Independent, Grocers' Review, Alliance News (Manchester), Public Opinion, Public Health, Temperance Record, Pioneer Mail, Kentish Mercury, Times of India, Goole Weekly Times, Macclesfield Chronicle, Coleraine Constitution, Luton News, Border Counties Gazette, Kettering Leader, Barry Dock News, Blyth Examiner, North Wilts Herald, Bridgnorth Journal, Barnsley Independent, Admiralty and Horse Guards Gazette, Egyptian Gazette, Le Courrier de la Presse (Paris)*, &c., have been received.

Medical Diary for the ensuing Week.

Monday, July 11.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M., and on Tuesday, Wednesday, Friday, and Saturday at the same hour.
ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations daily at 10 A.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M. and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.
UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M.
NATIONAL ORTHOPÆDIC HOSPITAL (Great Portland-street, W.).—5 P.M. Mr. A. H. Tubby: Congenital Dislocations.

Tuesday, July 12.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays at the same hour.
GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same day, 2 P.M.

Wednesday, July 13.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1.30 P.M.; Saturdays, 2 P.M. Obstetrical Operations, Thursdays, 2 P.M.
CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M.; Thursday & Saturday, same hour.
ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M. Surgical Visits on Wednesday and Saturday at 9.15 A.M.

Thursday, July 14.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.

Friday, July 15.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, July 16.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

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Agent for the Advertisement Department in France—J. ASTIER, 66, Rue Caumartin, Paris.